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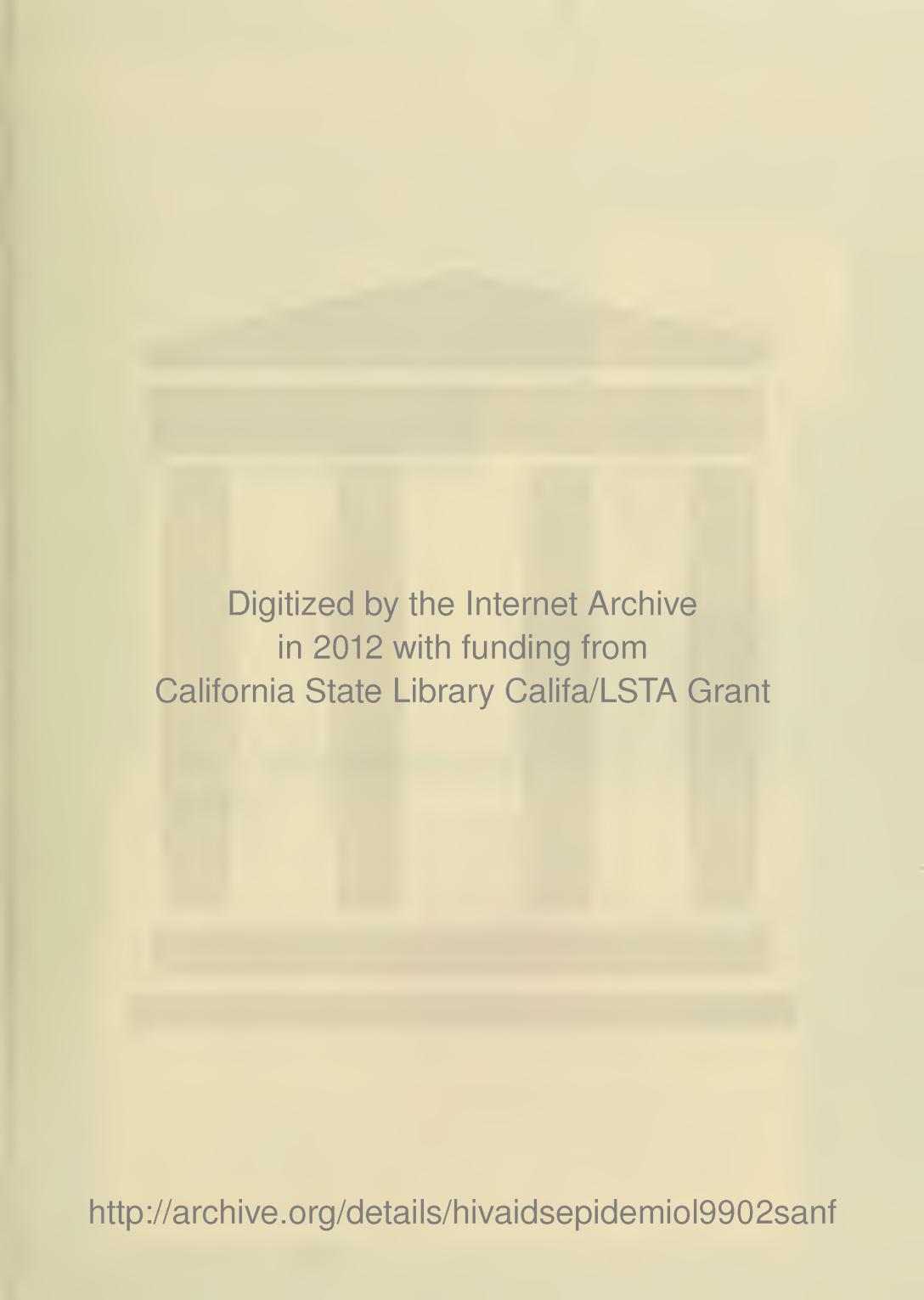


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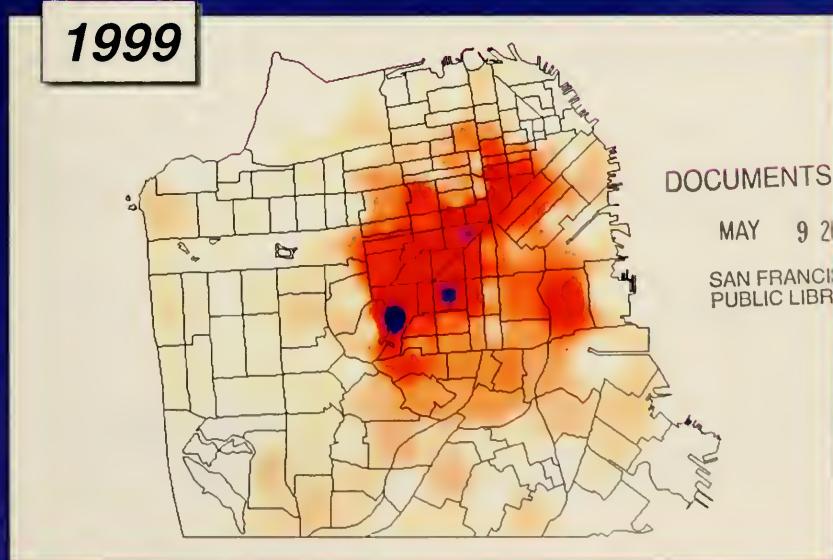
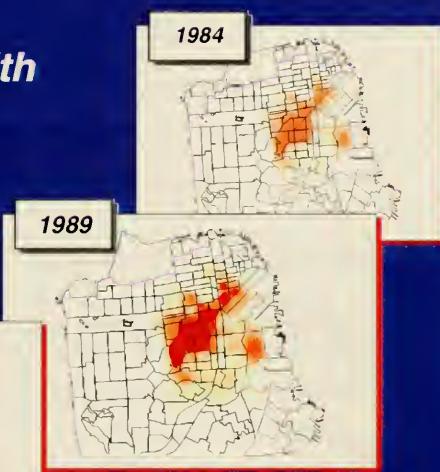


# 1999 HIV/AIDS Epidemiology Annual Report

San Francisco

Department of Public Health

HIV Seroepidemiology and  
AIDS Surveillance Section



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## Executive Summary

In 1997, a panel of local epidemiologists, behavioral scientists, service providers, and other researchers estimated that 15,000 San Franciscans were living with HIV and that 500 would acquire infection that year (1). Surveillance and other epidemiological data collected since 1997, many of which are summarized in this report, suggest a modest increase in the number of San Franciscans living with HIV and the same or slightly greater number of new infections each year. At present, we estimate 17,000 to 18,000 San Franciscans are living with HIV and 500 to 600 will acquire infection in the year 2000. Indeed, prevailing trends point to both successes and failures of prevention and treatment of HIV/AIDS in our city.

We see continued declines in new AIDS diagnoses, AIDS-related morbidity, and AIDS-related deaths in all demographic and risk populations. Gains in survival are associated with the use of highly active anti-retroviral therapy (HAART) and the proportion of persons with AIDS who are taking or have access to HAART in San Francisco is high (2). While declining from a peak in 1992-93, the vast majority of new AIDS cases continue to be among men who have sex with men (MSM), followed by injection drug user (IDU) MSM. Female and heterosexual male IDU make up most of the remaining cases. As declines among whites have occurred faster than other racial/ethnic groups, the last few years have witnessed a slight shift in the burden of disease towards African Americans and Latinos. Geographically, HIV/AIDS cases are overwhelmingly concentrated in the Castro and Tenderloin neighborhoods. Nonetheless, adjacent inner-city neighborhoods such as the Mission, Western Addition, South of Market, and the Bayview (for African Americans) also bear a high burden of disease. Heterosexual, transfusion-associated, and mother-to-child AIDS cases remain rare in San Francisco.

Several important trends have emerged in recent years. While decreases in morbidity and mortality point to remarkable successes in HIV treatment, the number of persons living with AIDS is larger than ever. Merging of surveillance databases has found an increase in the number of sexually transmitted disease (STD) cases among persons living with AIDS (3). From 1994 to 1999 there has also been an increase in the number of cases of male rectal gonorrhea citywide (4). Moreover, increases in the prevalence of unprotected anal sex and multiple partners among MSM (based on interviews from community-based studies) corroborate our AIDS and STD surveillance data. Increases in risky behavior may be associated with changing perceptions about the seriousness of HIV and the probability of transmission engendered by the availability of HAART.

The present report represents an expanded, comprehensive effort to summarize HIV/AIDS surveillance data through the end of 1999. The report begins with an overview of AIDS surveillance data including characterization of new AIDS cases, AIDS deaths, survival, treatment, and access to care. Following sections provide focus on the major transmission categories: men who have sex with men, injection drug users, and high risk heterosexuals. We also summarize data on several important populations including women, children, youth, transgendered persons, and homeless persons. We hope that the report will help HIV services planning and HIV prevention efforts. We envision that future reports will be updated and expanded to include more detailed characterizations of recent HIV infection, geographical prevalence, and in-depth summaries of emerging issues within diverse populations.

## Overview of HIV/AIDS in San Francisco

As of December 31, 1999, a cumulative total of 26,616 AIDS cases were reported in San Francisco. This comprises 23% of California AIDS cases and four percent of cases reported nationally. As of December 1999, San Francisco ranked third in the cumulative number of AIDS cases among metropolitan areas nationwide. Compared to California and the United States as a whole, AIDS cases in San Francisco are more likely to be male, white, and to occur among men who have sex with men (MSM), including MSM who also inject drugs (MSM & IDU) (Table 1).

**Table 1. Characteristics of Cumulative AIDS Cases in San Francisco, California, and the United States, Reported through December 1999**

	San Francisco (N = 26,616)		California (N = 115,324)	United States (N = 733,374)
	No.	%	%	%
<b>Gender</b>				
Male	25,449	96%	93%	83%
Female	952	4%	7%	17%
Transgender*	215	<1%	--	--
<b>Race/Ethnicity</b>				
White	19,842	75%	61%	43%
African American	3,137	12%	17%	37%
Latino	2,777	10%	20%	18%
Asian/Pacific Islander	740	3%	2%	< 1%
Native American	120	< 1%	< 1%	< 1%
<b>Exposure Category</b>				
MSM	20,759	78%	70%	47%
IDU	1,801	7%	10%	25%
MSM & IDU	3,245	12%	9%	6%
Heterosexual	337	1%	4%	10%
Transfusion/Hemophilia	247	1%	2%	2%
Other/Risk not reported or identified	227	1%	4%	10%

\* Includes 211 male-to-female and 4 female-to-male transgendered persons with AIDS. Data not reported by California and the United States. See Technical Notes 'Transgender Status'.

MSM account for the majority of male AIDS cases within all race/ethnic groups (Table 2). Among African American men, heterosexual injection drug use is the second most frequent exposure category while MSM-IDU represents the second most frequent exposure among men of all other race/ethnic groups. Less than one percent of all men acquired their infection through heterosexual contact.

The most frequent exposure category among women with AIDS is injection drug use, followed by heterosexual contact, with the exception of Asian/Pacific Islander women. Among Asian/Pacific Islander women, 41% acquired their infection through heterosexual contact, 32% through injection drug use, and 24% through transfusion of blood or blood products.

**Table 2. Cumulative AIDS Cases by Gender, Exposure Category, and Race/Ethnicity, Reported through December 1999, San Francisco**

	White No. (%)	African American No. (%)	Latino No. (%)	Asian Pac. Isl. No. (%)	Native American No. (%)
<b>Male</b>					
MSM	16,454 (85)	1,516 (57)	2,068 (80)	557 (84)	61 (56)
IDU	453 ( 2)	599 (23)	169 ( 6)	19 ( 3)	8 ( 7)
MSM & IDU	2,332 (12)	457 (17)	273 (11)	42 ( 6)	37 (34)
Heterosexual	31 (<1)	23 (<1)	13 (<1)	5 (<1)	0 ( 0)
Transfusion/Hemophilia	103 (<1)	18 (<1)	27 ( 1)	26 ( 4)	0 ( 0)
Other/Unidentified	58 (<1)	38 ( 1)	48 ( 2)	12 ( 2)	2 ( 2)
<b>Male Subtotal</b>	<b>19,431 (100)</b>	<b>2,651 (100)</b>	<b>2,598 (100)</b>	<b>661 (100)</b>	<b>108 (100)</b>
<b>Female</b>					
IDU	180 (52)	285 (68)	52 (44)	19 (32)	10 (91)
Heterosexual	104 (30)	89 (21)	46 (39)	24 (41)	1 ( 9)
Transfusion/Hemophilia	45 (13)	17 ( 4)	12 (10)	14 (24)	0 ( 0)
Other/Unidentified	15 ( 4)	28 ( 7)	9 ( 7)	2 ( 3)	0 ( 0)
<b>Female Subtotal</b>	<b>344 (100)</b>	<b>419 (100)</b>	<b>119 (100)</b>	<b>59 (100)</b>	<b>11 (100)</b>
<b>Transgender*</b>	<b>67</b>	<b>67</b>	<b>60</b>	<b>#</b>	<b>#</b>

\* See Technical Notes 'Transgender Status'.

# There were a total of 21 transgendered persons of Asian/Pacific Islander and Native American race/ethnicity. The number of Native American transgendered persons with AIDS was less than 5.

Information on persons with AIDS is relatively complete through AIDS surveillance activities. In contrast, data on persons with HIV infection who have not yet developed AIDS is derived from a variety of less reliable sources including blinded HIV seroprevalence and incidence surveys (5,6), record-based incidence studies (7), cohort studies (8,9), and HIV counseling and testing data (10).

In 1997, the San Francisco Department of Public Health convened a panel of experts to review available data and to use these data to derive estimates of the size of the at-risk population, the prevalence of HIV, and incidence of new infection (1). The panel estimated that over 15,000 persons were living with HIV infection in San Francisco (Table 3), half of whom had AIDS. The number of new HIV infections was estimated to be nearly 500 per year. Since that time, the number of persons living with HIV has increased due to highly active antiretroviral therapies extending survival after AIDS and delaying progression from HIV infection to AIDS (14,15). HIV prevalence and incidence data collected since 1997 suggest that relative burden of disease and the number of new infections has remained relatively stable by demographic and risk characteristics.

**Table 3. The 1997 Consensus Report: Estimated HIV Incidence and Prevalence in San Francisco**

	Population Size <sup>1</sup>	Prevalence <sup>2</sup> No. (%)	Incidence <sup>3</sup> No.
<b>Men Who Have Sex with Men</b>			
MSM/Non IDU	39,000	11,700 (30%)	283
Young (<30 years)	6,300	945 (15%)	64
Older (≥30 years)	32,700	10,755 (33%)	219
MSM/IDU	4,100	1,435 (35%)	53
Subtotal	43,100	13,135 (31%)	336
<b>Heterosexual IDU</b>			
Male	8,500	1,020 (12%)	76
Female	4,500	540 (12%)	41
Subtotal	13,000	1,560 (12%)	117
<b>Other Adults/Adolescents</b>			
Heterosexual male	225,719	156 (<0.1%)	16
Female	260,198	282 ( 0.1%)	28
Transfusion/Blood disorders		50	1
Subtotal	485,917	488 ( 0.1%)	45
<b>Infants/Children (&lt;13 years)</b>			
	118,892	66 (<0.1%)	1
<b>Total</b>	<b>660,909</b>	<b>15,249 (2%)</b>	<b>499</b>

1. 1997 estimated San Francisco population 0 – 64 years of age.

2. Number and percent of persons living with HIV (including AIDS).

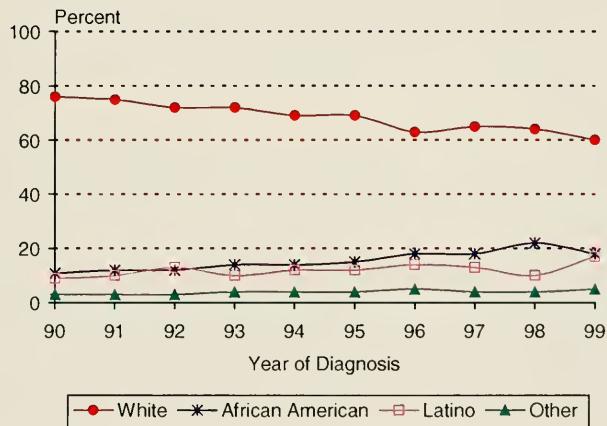
3. Number of new infections occurred each year.

## Trends in AIDS Incidence

### *Race/ethnicity*

AIDS cases in San Francisco have occurred predominately among whites. However, the proportion of AIDS cases among nonwhites, particularly African Americans, has been increasing (Figure 1).

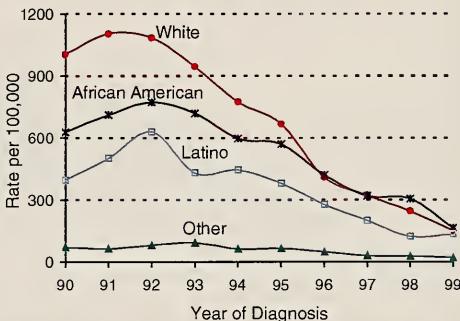
**Figure 1. Percent of AIDS Cases by Race/Ethnicity and Year of Diagnosis, San Francisco, 1990-1999**



The incidence of AIDS among men of all race/ethnic groups peaked in 1992 and has declined through 1999 (Figure 2). In 1998, the incidence rate of AIDS among African American men exceeded the rate among whites. In 1999, the rate of new AIDS cases among African American men was 164 per 100,000 population compared to 151 per 100,000 population among white men.

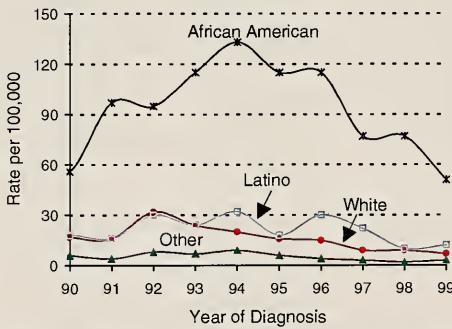
Among women, the incidence rate of AIDS peaked in 1994 (Figure 3). AIDS has disproportionately affected African American women throughout the epidemic. In 1999, the incidence rate of AIDS among African American women was 51 per 100,000 population; four times greater than the rate among Latino women, seven times greater than the rate among white women, and 17 times greater than the rate among Asian and Native American women.

**Figure 2. Male Annual AIDS Incidence Rates\* per 100,000 Population by Race/Ethnicity, San Francisco, 1990-1999**



\* Excludes 211 male-to-female transgender cases. See Technical Notes 'Transgender Status'. Also see Technical Notes 'AIDS Incidence Rates' for rates calculation.

**Figure 3. Female Annual AIDS Incidence Rates\* per 100,000 Population by Race/Ethnicity, San Francisco, 1990-1999**

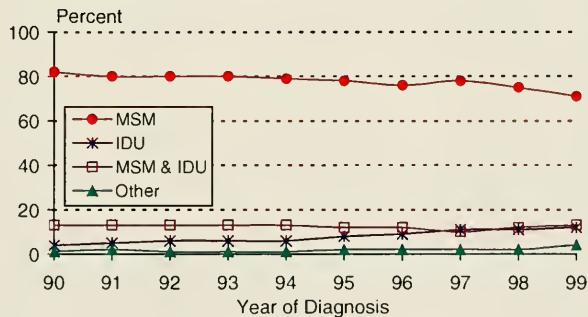


\* Excludes 4 female-to-male transgender cases. See Technical Notes 'Transgender Status'. Also see Technical Notes 'AIDS Incidence Rates' for rates calculation.

## Exposure category

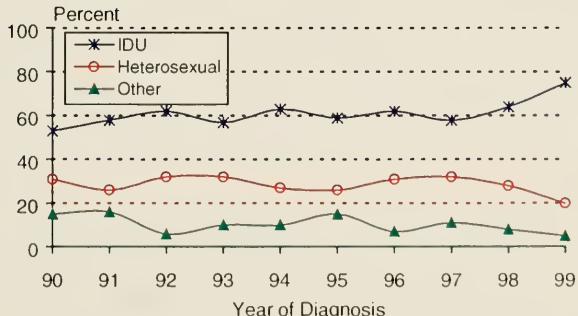
While the absolute number of new AIDS cases have declined, the relative burden of AIDS has shifted slightly. The greatest proportion of male AIDS cases has occurred among MSM (Figure 4). Although there has been a small decline in the proportion of male AIDS cases among MSM, the vast majority (71%) of male cases still occurred among MSM in 1999. MSM-IDU accounted for 13% of AIDS cases in 1999. The proportion of male AIDS cases among heterosexual injection drug users (IDU) has increased. In 1999, 12% of male cases were among heterosexual IDU. Among women with AIDS, exposure has been attributed primarily to injection drug use followed by heterosexual transmission (Figure 5). Recent trends suggest that injection drug use is accounting for an even greater proportion of female AIDS cases; in 1999, 75% of AIDS cases in women were due to injection drug use.

**Figure 4. Percent of Male\* AIDS Cases by Exposure Category and Year of Diagnosis, San Francisco, 1990-1999**



\* Excludes 211 male-to-female transgender cases. See Technical Notes 'Transgender Status'.

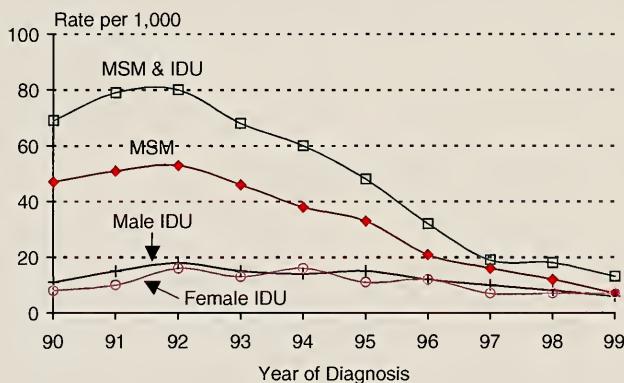
**Figure 5. Percent of Female\* AIDS Cases by Exposure Category and Year of Diagnosis, San Francisco, 1990-1999**



\* Excludes 4 female-to-male transgender cases. See Technical Notes 'Transgender Status'.

The incidence rates of AIDS by exposure category were derived using estimates of the size of the at risk population developed at the 1997 consensus meeting (1). The incidence of AIDS among MSM and MSM IDU has declined since 1992 (Figure 6). Risk group specific rates of AIDS are highest among MSM IDU, followed by MSM, and then by male and female IDU. MSM, including MSM IDU have experienced the greatest decline in AIDS. In 1999, the incidence rate of AIDS per 1,000 population was 13 among MSM IDU, 7 among MSM, 6 among male heterosexual IDU, and 7 among female IDU.

**Figure 6. Estimated Adult/Adolescent Annual AIDS Incidence Rates\* per 1,000 Population by Risk, San Francisco, 1990-1999**



\* Excludes transgender cases. See Technical Notes 'Transgender Status'. Also see Technical Notes 'AIDS Incidence Rates' for rates calculation.

### Age

The largest number of men and women with AIDS were diagnosed between ages 30 and 39 years (Table 4). AIDS has been diagnosed more frequently among younger women (aged 20-29 years) than among younger men. Although the age at diagnosis has been relatively stable, there appears to be a small increase in the percent of men and women diagnosed with AIDS in the older age group (over 40 years). This likely reflects the use of effective therapies for HIV infection which have extended the time from acquiring HIV infection to the development of AIDS.

**Table 4. AIDS Cases by Gender\* and Age at Diagnosis, Diagnosed 1990-1999, and Cumulative Totals through December 1999, San Francisco**

	<b>1990-1992 No. (%)</b>	<b>1993-1995 No. (%)</b>	<b>1996-1999 No. (%)</b>	<b>Cumulative Totals No. (%)</b>
<b>Male</b>				
0-19	11 (<1%)	11 (<1%)	8 (<1%)	55 (<1%)
20-29	844 (12%)	620 (11%)	283 (10%)	2,973 (12%)
30-39	3,391 (46%)	2,521 (44%)	1,261 (43%)	11,722 (46%)
40-49	2,271 (31%)	1,883 (33%)	980 (34%)	7,866 (31%)
50+	797 (11%)	666 (12%)	378 (13%)	2,833 (11%)
<b>Male Subtotal</b>	<b>7,314 (100%)</b>	<b>5,700 (100%)</b>	<b>2,910 (100%)</b>	<b>25,449 (100%)</b>
<b>Female</b>				
0-19	8 ( 3%)	5 ( 2%)	5 ( 2%)	30 ( 3%)
20-29	48 (19%)	44 (15%)	33 (14%)	145 (15%)
30-39	108 (43%)	130 (43%)	93 (39%)	393 (41%)
40-49	57 (23%)	94 (31%)	80 (34%)	259 (27%)
50+	32 (13%)	30 (10%)	25 (11%)	125 (13%)
<b>Female Subtotal</b>	<b>253 (100%)</b>	<b>303 (100%)</b>	<b>236 (100%)</b>	<b>952 (100%)</b>

\* Excludes 211 male-to-female and 4 female-to-male transgender cases. We cannot analyze temporal trends in AIDS cases by transgender status because we only began to collect this information in September 1996. See Technical Notes 'Transgender Status'.

## Trends in AIDS Deaths

A total of 18,164 AIDS deaths had been reported in San Francisco as of December 31, 1999. The number of deaths among persons with AIDS first declined in 1995. The decline in deaths among persons with AIDS has continued through 1999. The greatest decline in deaths occurred between 1996 and 1997 in which AIDS deaths decreased by nearly 60% (Table 5). The decrease in AIDS deaths can be attributed to the availability of highly active antiretroviral therapies in late 1995. Declines in deaths occurred among all demographic and risk groups. Declines in deaths were greater for men than for women between 1995 and 1997. However, between 1997 and 1998, the decline in deaths was greater among women than among men, suggesting that men experienced a treatment benefit earlier than women. A similar pattern was observed by race/ethnicity, also suggesting that whites benefited earlier than nonwhites from improved HIV/AIDS therapies.

**Table 5. Number of AIDS Deaths that Occurred Between 1994 and 1998, and Percent Change<sup>¶</sup> in AIDS Deaths, by Gender, Race/Ethnicity, and Risk, San Francisco**

	Year of Death					Cumulative Totals as of 12/31/99
	1994 No.	1995 No. (% change)	1996 No. (% change)	1997 No. (% change)	1998 No. (% change)	
<b>Gender*</b>						
Male	1,734	1,618 ( -7% )	1,057 ( -35% )	433 ( -59% )	300 ( -31% )	17,603
Female	67	51 ( -24% )	56 ( 10% )	25 ( -55% )	13 ( -48% )	461
<b>Race/Ethnicity</b>						
White	1,306	1,223 ( -6% )	779 ( -36% )	311 ( -60% )	229 ( -26% )	14,040
African American	230	214 ( -7% )	164 ( -23% )	86 ( -48% )	61 ( -29% )	1,905
Latino	206	177 ( -14% )	137 ( -23% )	50 ( -64% )	23 ( -54% )	1,703
Other	72	66 ( -8% )	41 ( -38% )	16 ( -61% )	9 ( -44% )	516
<b>Risk</b>						
MSM	1,435	1,270 ( -11% )	820 ( -35% )	308 ( -62% )	211 ( -31% )	14,441
IDU	112	125 ( 12% )	115 ( -8% )	65 ( -43% )	46 ( -29% )	958
MSM & IDU	203	236 ( 16% )	155 ( -34% )	73 ( -53% )	56 ( -23% )	2,291
Heterosexual	24	20 ( -17% )	13 ( -35% )	10 ( -23% )	3 ( -70% )	156
Other/Unidentified	40	29 ( -28% )	18 ( -38% )	7 ( -61% )	6 ( -14% )	318
<b>Total</b>	<b>1,814</b>	<b>1,680 ( -7% )</b>	<b>1,121 ( -33% )</b>	<b>463 ( -59% )</b>	<b>322 ( -30% )</b>	<b>18,164</b>

¶ Percent change was calculated using the number of deaths occurred in a given year minus the number of deaths that occurred in the previous year, divided by the number of deaths occurred in the previous year; a positive percent indicates increase and a negative percent indicates decrease in the number of deaths from previous year.

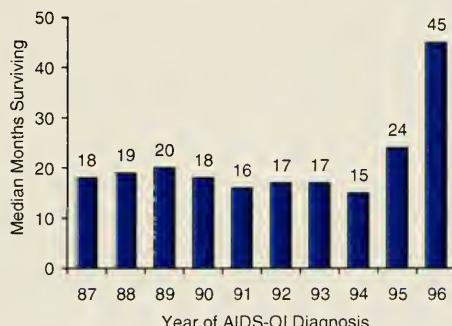
\* Excludes AIDS deaths among transgendered persons with AIDS. We cannot analyze temporal trends in AIDS deaths by transgender status because we only began to collect this information in September 1996. See Technical Notes 'Transgender Status'.

## AIDS Survival

The median survival after AIDS ranged from 18 to 20 months for persons diagnosed between 1987 and 1990 (Figure 7). The median survival was lower (range 15-17 months) for persons diagnosed between 1991 and 1994. For persons diagnosed in 1995, survival increased to 24 months; and survival increased again to 45 months for persons diagnosed in 1996. The decrease in survival in the early 1990s is most likely due to the introduction of prophylaxis against *Pneumocystis carinii* pneumonia which resulted in persons being diagnosed with AIDS later in the course of disease and thereby reducing survival after AIDS. The most recent increases in survival reflect the dramatic benefit of highly active antiretroviral therapies.

The increases in survival have occurred among all demographic and risk groups (Table 6). The median survival is somewhat greater among men, whites, and MSM than among other demographic and risk groups, likely reflecting earlier and greater use of combination antiretroviral therapies.

**Figure 7. Trends in Median Months of Survival\* After AIDS-OI Diagnosis, San Francisco, 1987-1996**



\* See Technical Notes 'AIDS Survival'.

**Table 6. Trends in Median Months of Survival\* After AIDS-OI Diagnosis by Gender, Race/Ethnicity, and Risk, San Francisco, 1987-1997**

	<b>1987-1989 (N = 5,042)</b>	<b>1990-1994 (N = 8,334)</b>	<b>1995-1997 (N = 2,586)</b>
<b>Total</b>	<b>19</b>	<b>17</b>	<b>51</b>
<b>Gender*</b>			
Male	19	17	51
Female	15	18.5	47
<b>Race/Ethnicity</b>			
White	19	17	52
African American	15	16	38
Latino	18	17	45
Other	18	19	35
<b>Risk</b>			
MSM	19	17	53
IDU	15	16	32
MSM & IDU	16	16	39
Other	14.5	18	28

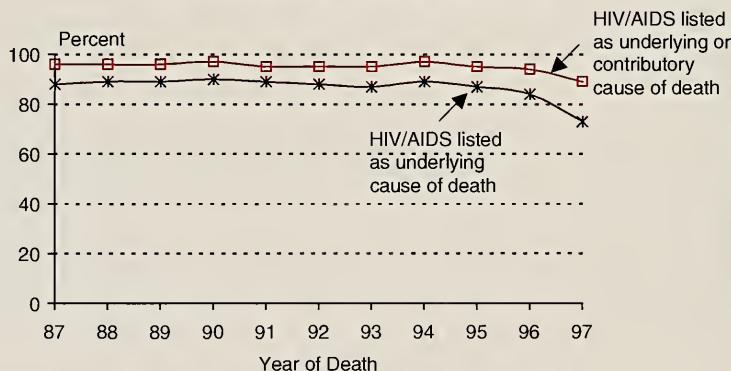
¶ See Technical Notes 'AIDS Survival'.

\* We cannot analyze temporal trends in AIDS survival by transgender status because we only began to collect this information in September 1996. See Technical Notes 'Transgender Status'.

## Causes of Death Among Persons with AIDS

HIV/AIDS was listed as an underlying or contributory cause of death for over 94% of deaths among persons diagnosed with AIDS in San Francisco. The percent of deaths that included HIV/AIDS as an underlying or contributory cause was stable between 1987 and 1995 (Figure 8). However, in 1996 and again in 1997, the percent of persons with AIDS in whom HIV/AIDS was listed as an underlying or contributory cause of death declined, suggesting that deaths due to causes other than HIV/AIDS (e.g. drug overdose, suicide) increased among persons with AIDS in recent years.

**Figure 8. Percent of HIV/AIDS\* Listed as Cause of Death on Death Certificate Among Persons Reported with AIDS by Year of Death, San Francisco, 1987-1997**



\* Includes AIDS defining conditions. See Technical Notes 'Causes of Death'.

Excluding HIV/AIDS, the most frequently cited underlying causes of death in 1995 and 1997 among persons with AIDS were other infectious diseases (3.8%) [notably viral hepatitis (1.5%) and aspergillosis (1.4%)], injuries and poisonings (2.8%) [including drug overdose (1.2%) and suicide (0.9%)], and non-AIDS cancers (2.3%) (Table 7). The percent of persons with AIDS who died of these conditions between 1995 and 1997 increased compared to earlier time periods. The percent that died of heart diseases and other cardiovascular or respiratory diseases also increased. The increase in the percent of deaths among persons with AIDS that are not attributed to HIV/AIDS may be due to the extended survival in which the additional time alive allows for the development of causes of death unrelated to HIV/AIDS. It is also possible that some of these deaths reflect adverse side effects of HIV/AIDS treatments. Note, however, that these deaths represent a very small number in comparison to HIV/AIDS-related deaths.

**Table 7. Underlying Causes of Death\* Among Persons with AIDS,  
San Francisco, 1987-1997**

Underlying Cause of Death	Year of Death		
	1987-1990 No. (%)	1991-1994 No. (%)	1995-1997 No. (%)
HIV/AIDS	3,935 (86.1%)	5,502 (86.4%)	2,632 (81.8%)
AIDS defining conditions	148 (3.2%)	116 (1.8%)	68 (2.1%)
Infections not included in AIDS definition	52 (1.1%)	153 (2.4%)	123 (3.8%)
<i>Viral hepatitis</i>	16 (0.4%)	49 (0.8%)	49 (1.5%)
<i>Aspergillosis</i>	4 (0.1%)	45 (0.7%)	44 (1.4%)
Injury and poisoning	73 (1.6%)	131 (2.0%)	89 (2.8%)
<i>Drug overdose</i>	10 (0.2%)	38 (0.6%)	39 (1.2%)
<i>Suicide</i>	38 (0.8%)	65 (1.0%)	28 (0.9%)
Cancers not included in AIDS definition	64 (1.4%)	94 (1.5%)	73 (2.3%)
<i>Lung/bronchial cancer</i>	28 (0.6%)	30 (0.5%)	16 (0.5%)
<i>Hodgkin's disease</i>	5 (0.1%)	5 (0.1%)	10 (0.3%)
Heart disease	41 (0.9%)	49 (0.8%)	39 (1.2%)
Pneumonia	53 (1.2%)	53 (0.8%)	37 (1.2%)
Liver disease	28 (0.6%)	74 (1.2%)	25 (0.8%)
Unknown or unspecified cause	3 (0.1%)	2 (<0.1%)	22 (0.7%)
Other respiratory system diseases	19 (0.4%)	23 (0.4%)	20 (0.6%)
Other cardiovascular diseases	15 (0.3%)	24 (0.4%)	18 (0.6%)
Other digestive system diseases	20 (0.4%)	27 (0.4%)	16 (0.5%)
Other immune deficiencies	67 (1.5%)	54 (0.9%)	16 (0.5%)
Other causes	52 (1.1%)	64 (1.0%)	40 (1.2%)
<b>Total</b>	<b>4,570 (100%)</b>	<b>6,366 (100%)</b>	<b>3,218 (100%)</b>

\* See Technical Notes 'Causes of Death'.

## Persons Living with AIDS

Although the annual number of new AIDS cases has decreased since 1992, the ongoing incidence of AIDS, coupled with the increase in survival after AIDS has resulted in an increasing number of persons living with AIDS in San Francisco. As of December 31, 1999, there were 8,452 persons living with AIDS in San Francisco. The demographic and risk group characteristics of persons living with AIDS have remained relatively stable between 1996 and 1999; the majority is male, white, aged 40-49 years, and MSM (including MSM IDU) (Table 8). The percent of persons living with AIDS who are older (≥40 years) has increased over time, suggesting the use of treatments for HIV infection has delayed the age at AIDS diagnosis and prolonged the survival of AIDS.

**Table 8. Persons Living with AIDS by Demographic and Risk Characteristics, San Francisco, 1996-1999<sup>¶</sup>**

	1996 No. (%)	1997 No. (%)	1998 No. (%)	1999 No. (%)
<b>Gender</b>				
Male	6,937 (93)	7,315 (93)	7,645 (93)	7,846 (93)
Female	402 ( 5)	434 ( 6)	471 ( 6)	491 ( 6)
Transgender*	96 ( 1)	109 ( 1)	108 ( 1)	115 ( 1)
<b>Race/Ethnicity</b>				
White	5,206 (70)	5,471 (70)	5,684 (69)	5,802 (69)
African American	1,039 (14)	1,109 (14)	1,196 (15)	1,232 (15)
Latino	902 (12)	970 (12)	1,015 (12)	1,074 (13)
Asian/Pacific Islander	247 ( 3)	268 ( 3)	286 ( 3)	298 ( 3)
Native American	41 (<1)	40 (<1)	43 (<1)	46 (<1)
<b>Age (at end of each year)</b>				
0-19	17 (<1)	16 (<1)	18 (<1)	19 (<1)
20-29	379 ( 5)	370 ( 5)	317 ( 4)	254 ( 3)
30-39	2,893 (39)	2,874 (37)	2,820 (34)	2,671 (32)
40-49	2,971 (40)	3,167 (40)	3,397 (41)	3,599 (43)
50+	1,175 (16)	1,431 (18)	1,672 (20)	1,909 (23)
<b>Exposure Category</b>				
<b>Male</b>				
MSM	5,559 (79)	5,890 (79)	6,157 (79)	6,318 (79)
IDU	454 ( 6)	489 ( 7)	523 ( 7)	547 ( 7)
MSM & IDU	914 (13)	926 (12)	945 (12)	954 (12)
Other/Unidentified	105 ( 1)	117 ( 2)	125 ( 2)	139 ( 2)
<b>Female</b>				
IDU	239 (59)	259 (59)	283 (60)	296 (60)
Heterosexual	124 (31)	134 (31)	145 (31)	150 (30)
Other/Unidentified	40 (10)	43 (10)	46 (10)	48 (10)
<b>Total</b>	<b>7,435</b>	<b>7,858</b>	<b>8,224</b>	<b>8,452</b>

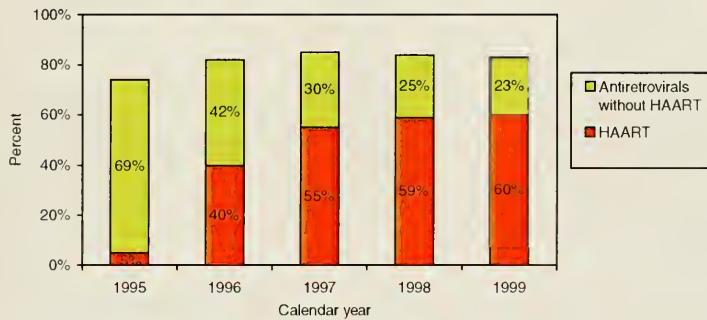
<sup>¶</sup> Persons living with AIDS at the end of each year.

\* See Technical Notes 'Transgender Status'.

## Use of Highly Active Antiretroviral Therapy (HAART) Among Persons Living with AIDS

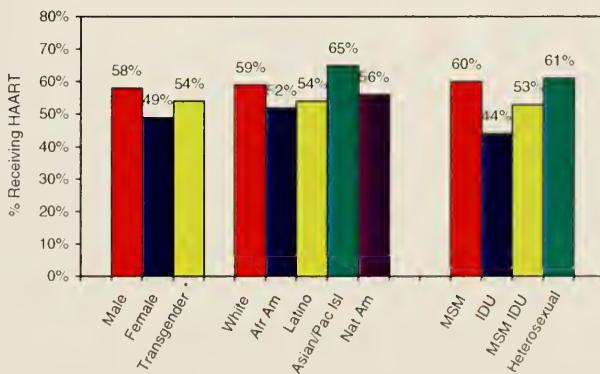
The majority of persons with AIDS in San Francisco have received antiretroviral therapy and the proportion of persons with AIDS on therapy has been increasing since 1995. Between 1995 and 1999, the use of HAART increased substantially (Figure 9). By the end of 1999, 83% of persons living with AIDS had received some type of antiretroviral therapy and 60% were noted to have received HAART. Use of HAART differs by demographic and risk groups and was most frequent among men, whites and Asians (Figure 10). HAART use was less frequent among heterosexual and homosexual injection drug users.

**Figure 9. Use of HIV Antiretrovirals\* and HAART Among Persons Living with AIDS by Year, San Francisco, 1995-1999**



\* See Technical Notes 'Treatments'.

**Figure 10. Use of HAART Among Persons Living with AIDS by Gender, Race/Ethnicity, and Risk, San Francisco, December 1999**

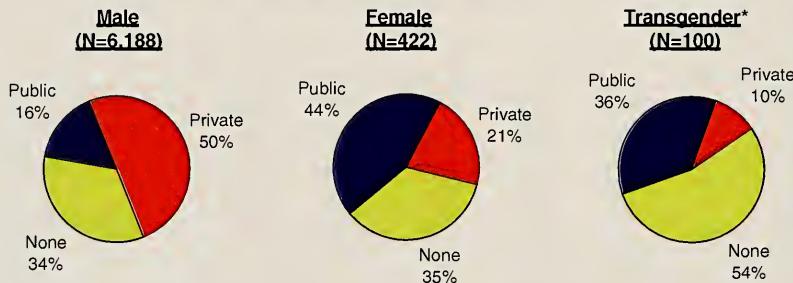


\* See Technical Notes 'Transgender Status'.

## Insurance Status at Diagnosis of AIDS

Insurance status at the time of AIDS diagnosis differs by gender. Although one third of both men and women who were diagnosed with AIDS between 1994 and 1999 were uninsured at the time of diagnosis, only 21% of women had private insurance compared to 50% of men (Figure 11). More than half of transgendered persons with AIDS were without health insurance at the time of diagnosis. Between 1994 and 1999, the proportion of men with AIDS without health insurance increased while the proportion of women without health insurance decreased (Figure 12).

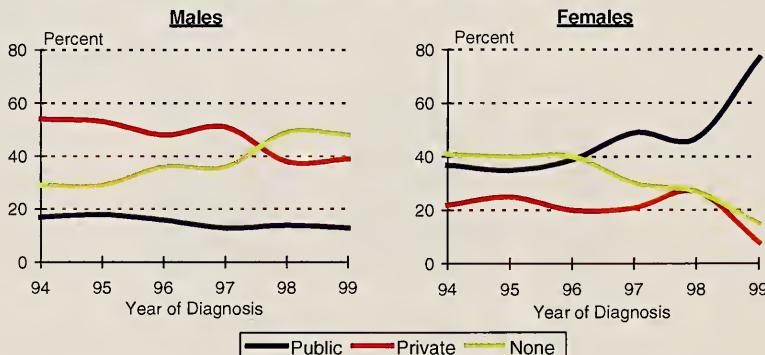
**Figure 11. AIDS Cases by Gender and Insurance Status<sup>1</sup> at Diagnosis, San Francisco, 1994-1999**



<sup>1</sup> Collection of insurance information started in 1994.

\* See Technical Notes 'Transgender Status'.

**Figure 12. Male and Female AIDS Cases\* by Insurance Status and Year of Diagnosis, San Francisco, 1994-1999**



\* Excludes transgender cases. We are unable to look at insurance status by year of diagnosis among transgender cases because we began collecting information on transgender status in September 1996.

## AIDS Opportunistic Illness

Initial and subsequent AIDS opportunistic illnesses (OIs) among persons with AIDS are collected through retrospective and prospective medical chart review. The number of AIDS OIs diagnosed each year has declined substantially between 1995 and 1999 for all AIDS indicator conditions (Table 9). Cryptococcosis, cryptosporidiosis, pulmonary tuberculosis, and PCP accounted for a slightly increasing proportion of all the OIs between 1995 and 1999. There was a notable decrease in the proportion of CMV, CMV retinitis and MAC diagnoses. The decrease in CMV is most likely due to immune reconstitution with protease inhibitors while the decrease in MAC is the result of both immune reconstitution and wider use of MAC prophylaxis.

**Table 9. Number of AIDS Opportunistic Illnesses\* Diagnosed Between 1995 and 1999, San Francisco**

AIDS Indicator Condition	1995	1996	1997	1998	1999
	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)
Candidiasis, bronchi, trachea, or lungs	6 ( 0.2 )	7 ( 0.3 )	2 ( 0.2 )	1 ( 0.1 )	6 ( 1.2 )
Candidiasis, esophageal	217 ( 5.7 )	158 ( 6.9 )	73 ( 7.0 )	37 ( 5.2 )	28 ( 5.8 )
Cervical cancer	0 ( 0.0 )	1 ( 0.0 )	1 ( 0.1 )	0 ( 0.0 )	1 ( 0.2 )
Coccidioidomycosis, disseminated or extrapulmonary	5 ( 0.1 )	4 ( 0.2 )	1 ( 0.1 )	1 ( 0.1 )	1 ( 0.2 )
Cryptococcosis, extrapulmonary	137 ( 3.6 )	89 ( 3.9 )	57 ( 5.4 )	39 ( 5.5 )	32 ( 6.6 )
Cryptosporidiosis, chronic intestinal	126 ( 3.3 )	69 ( 3.0 )	38 ( 3.6 )	32 ( 4.5 )	29 ( 6.0 )
Cytomegalovirus disease (CMV)	278 ( 7.3 )	129 ( 5.6 )	61 ( 5.8 )	21 ( 3.0 )	21 ( 4.3 )
Cytomegalovirus retinitis	287 ( 7.6 )	153 ( 6.7 )	37 ( 3.5 )	30 ( 4.2 )	20 ( 4.1 )
HIV encephalopathy	236 ( 6.2 )	118 ( 5.2 )	58 ( 5.5 )	54 ( 7.6 )	34 ( 7.0 )
Herpes simplex	25 ( 0.7 )	25 ( 1.1 )	10 ( 1.0 )	6 ( 0.8 )	3 ( 0.6 )
Histoplasmosis, disseminated or extrapulmonary	16 ( 0.4 )	12 ( 0.5 )	4 ( 0.4 )	2 ( 0.3 )	1 ( 0.2 )
Isosporiasis, chronic intestinal	3 ( 0.1 )	3 ( 0.1 )	2 ( 0.2 )	1 ( 0.1 )	1 ( 0.2 )
Kaposi's sarcoma	415 ( 10.9 )	261 ( 11.4 )	115 ( 11.0 )	52 ( 7.4 )	44 ( 9.1 )
Lymphoma, Burkitt's	56 ( 1.5 )	23 ( 1.0 )	14 ( 1.3 )	15 ( 2.1 )	5 ( 1.0 )
Lymphoma, immunoblastic	83 ( 2.2 )	68 ( 3.0 )	48 ( 4.6 )	21 ( 3.0 )	17 ( 3.5 )
Lymphoma, primary in brain	41 ( 1.1 )	35 ( 1.5 )	12 ( 1.1 )	4 ( 0.6 )	3 ( 0.6 )
Mycobacterium avium complex (MAC)	484 ( 12.8 )	231 ( 10.1 )	75 ( 7.1 )	51 ( 7.2 )	37 ( 7.6 )
Mycobacterium tuberculosis, disseminated or extrapulmonary	21 ( 0.6 )	25 ( 1.1 )	6 ( 0.6 )	5 ( 0.7 )	4 ( 0.8 )
Mycobacterium tuberculosis, pulmonary	55 ( 1.4 )	36 ( 1.6 )	14 ( 1.3 )	26 ( 3.7 )	22 ( 4.5 )
Mycobacterium, other species	21 ( 0.6 )	19 ( 0.8 )	3 ( 0.3 )	1 ( 0.1 )	6 ( 1.2 )
Pneumocystis carinii pneumonia (PCP)	555 ( 14.6 )	346 ( 15.1 )	195 ( 18.6 )	160 ( 22.6 )	103 ( 21.2 )
Pneumonia, recurrent	84 ( 2.2 )	90 ( 3.9 )	68 ( 6.5 )	36 ( 5.1 )	16 ( 3.3 )
Progressive multifocal leukoencephalopathy	52 ( 1.4 )	28 ( 1.2 )	7 ( 0.7 )	7 ( 1.0 )	4 ( 0.8 )
Salmonella sepsis, recurrent	4 ( 0.1 )	3 ( 0.1 )	1 ( 0.1 )	0 ( 0.0 )	0 ( 0.0 )
Toxoplasmosis of brain	58 ( 1.5 )	39 ( 1.7 )	14 ( 1.3 )	10 ( 1.4 )	4 ( 0.8 )
Wasting syndrome	530 ( 14.0 )	312 ( 13.7 )	134 ( 12.8 )	95 ( 13.4 )	44 ( 9.1 )
Total	3,795 ( 100 )	2,284 ( 100 )	1,050 ( 100 )	707 ( 100 )	486 ( 100 )

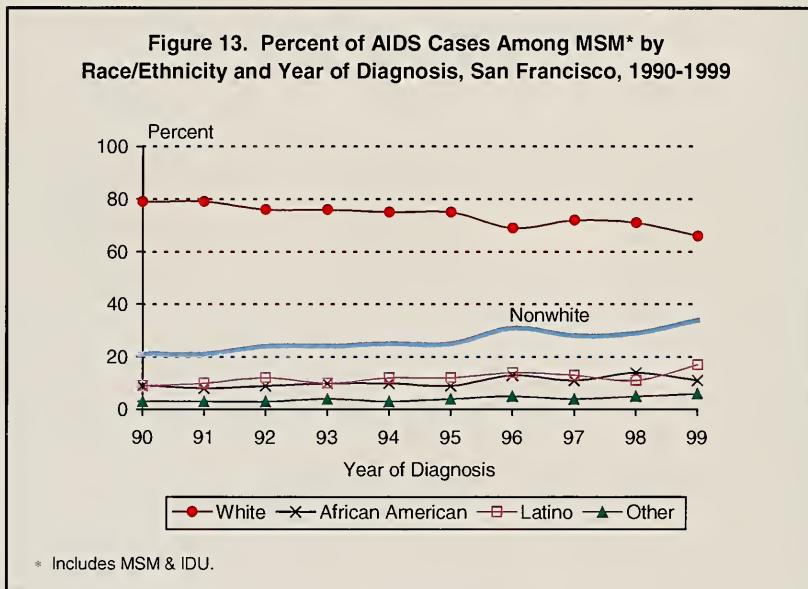
\* A person may have more than one opportunistic illness diagnosed during the same or different year.

Data are provisional for OIs diagnosed in recent years.

## HIV/AIDS Among Men Who Have Sex with Men

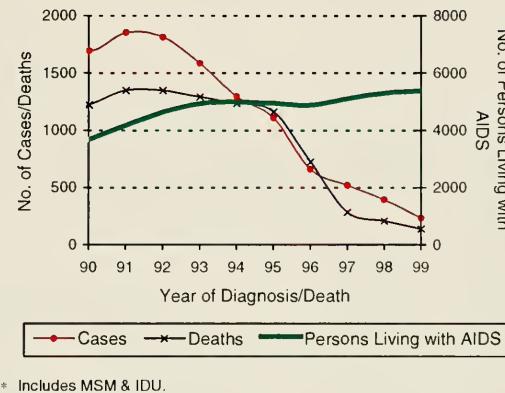
### *AIDS surveillance data*

Over 80% of AIDS cases in San Francisco have occurred among white MSM. Between 1990 and 1999 the proportion of AIDS cases among MSM who are white has declined slightly while the proportion of non-white MSM AIDS cases has increased (Figure 13).

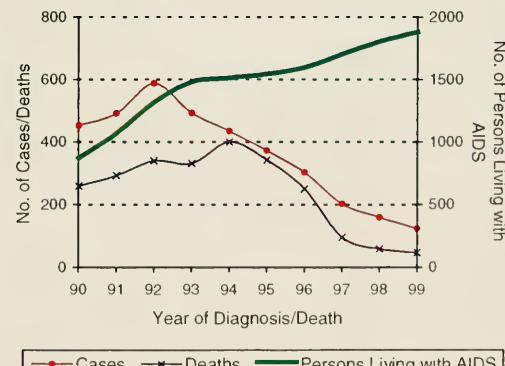


**Figure 14. AIDS Cases, Deaths, and Prevalence Among White MSM\* by Year, San Francisco, 1990-1999**

The number of new AIDS cases among white MSM peaked in 1991, earlier than in other groups; deaths among white MSM with AIDS peaked in 1991-1992 (Figure 14). The number of white MSM living with AIDS increased by 47% between 1990 and 1999. In contrast, the number of new AIDS cases among nonwhite MSM peaked in 1992 and deaths among nonwhite MSM peaked in 1994, two years later than among white MSM (Figure 15). Although the number of nonwhite MSM living with AIDS is substantially less than the number of white MSM living with AIDS, the number of nonwhite MSM living with AIDS doubled between 1990 and 1999.

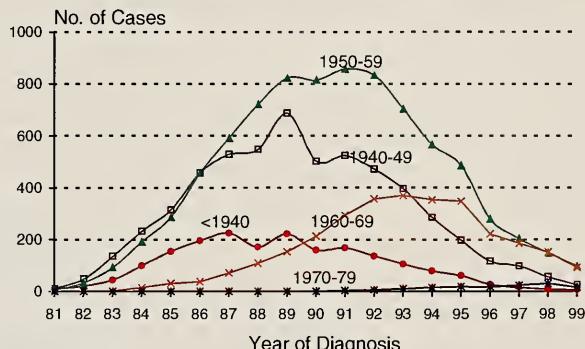


**Figure 15. AIDS Cases, Deaths, and Prevalence Among Nonwhite MSM\* by Year, San Francisco, 1990-1999**



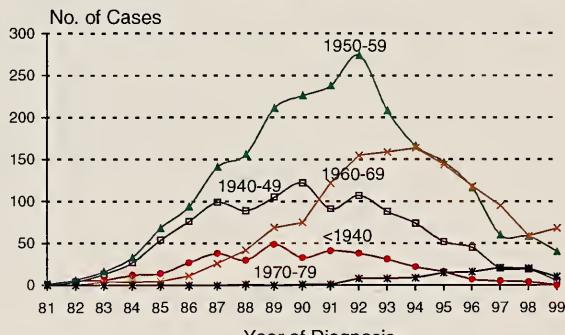
Examination of AIDS surveillance data according to birth cohort also demonstrates that white MSM were affected by AIDS somewhat earlier than MSM of color (Figure 16-17). For example, among white MSM born between 1940 and 1949, the number of new AIDS cases peaked in 1989 compared to 1990 among nonwhite MSM. Similarly, the number of new AIDS cases among white MSM born between 1950 and 1959 peaked in 1991 while the peak for nonwhite MSM in this birth cohort was in 1992. However, among MSM born between 1970 and 1979, the number of new AIDS cases was highest for both white and nonwhites in 1998. Because reporting is still incomplete for 1999, it is possible that the number of new AIDS cases in this birth cohort may continue to rise. This suggests that prevention efforts have been less effective among younger MSM.

**Figure 16. AIDS Cases Among White MSM\* by Birth Cohort and Year of Diagnosis, San Francisco, 1981-1999**



\* Includes MSM & IDU.

**Figure 17. AIDS Cases Among Nonwhite MSM\* by Birth Cohort and Year of Diagnosis, San Francisco, 1981-1999**



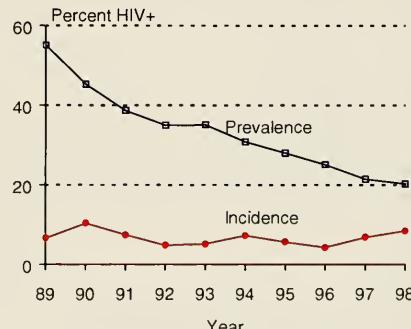
\* Includes MSM & IDU.

## HIV seroprevalence and seroincidence data

**STD clinic survey:** HIV prevalence data are available from annual blinded HIV seroprevalence surveys conducted at the San Francisco municipal sexually transmitted disease clinic (City Clinic) between 1989 and 1998. Application of the dual HIV testing strategy to serum stored from these seroprevalence surveys provided information on the incidence of new HIV infection in this population.

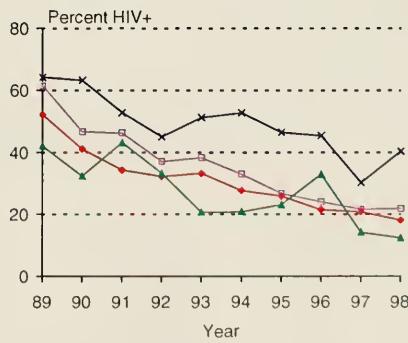
Between 1989 and 1998 the prevalence of HIV infection among MSM (including MSM IDU) declined from 55% in 1989 to 20% in 1998 (Figure 18). However, during the same time period the incidence of HIV infection among MSM fluctuated (range 4.3-10.4 % per year) but remained statistically stable. This suggests that the decline in HIV prevalence is most likely due to persons who knew of their HIV infection presenting at the STD clinic less frequently and receiving health care elsewhere. However, the relatively stable rate of new HIV infections suggests that current prevention strategies may be effective at holding HIV transmission rates stable but not effective enough to result in a further decrease in the rate of new infection. Of note, HIV prevalence was higher among African American MSM and Latino MSM than among white MSM throughout the entire survey period (Figure 19).

**Figure 18. HIV Prevalence and Incidence Among MSM\* Attending a STD Clinic by Year, San Francisco, 1989-1998**



\* Includes MSM & IDU.

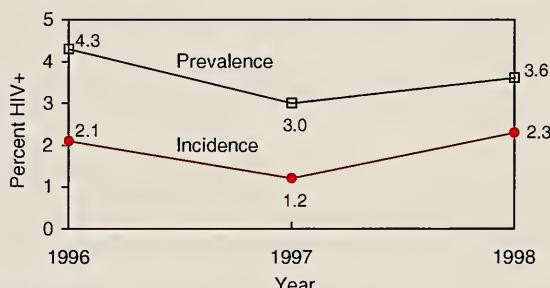
**Figure 19. HIV Prevalence Among MSM\* Attending a STD Clinic by Race/Ethnicity and Year, San Francisco, 1989-1998**



\* Includes MSM & IDU.

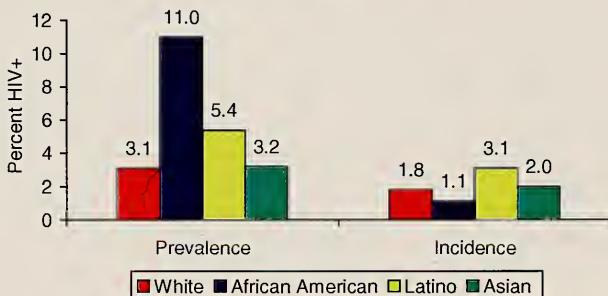
**Anonymous testing:** Data from the anonymous test sites (ATS) reflect voluntary HIV counseling and testing. The prevalence of HIV among MSM at these sites was approximately twice the incidence of HIV between 1996 and 1998, with a slight decline in both over these years (Figure 20). African American MSM at the ATS had the highest prevalence of HIV (11.0%) but the lowest incidence of HIV (1.1%) (Figure 21). This may be due to African Americans testing later in the course of their infection. Alternatively, African Americans may acquire HIV sometime earlier and therefore have fewer new infections. Incidence of HIV was highest among Latino MSM (3.1%), while the prevalence among Latinos was 5.4%. Prevalence and incidence rates at ATS may not be generalizable to the general population of MSM as they are based on persons who access testing at ATS, and do not reflect those who test elsewhere or who have never been tested for HIV.

**Figure 20. HIV Prevalence and Incidence Among MSM\* at Anonymous Testing Sites by Year, San Francisco, 1996-1998**



\* Includes MSM & IDU.

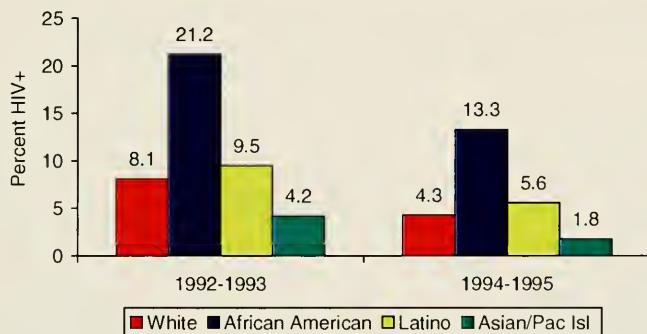
**Figure 21. HIV Prevalence and Incidence Among MSM\* at Anonymous Testing Sites by Race/Ethnicity, San Francisco, 1996-1998**



\* Includes MSM & IDU.

**Young Men's Survey:** Venue-based, cross-sectional HIV seroprevalence surveys were conducted among high risk MSM aged 17-22 years during two time periods, 1992-1993 (16) and 1994-1995 (17). In the 1992-1993 survey (N=425), HIV prevalence was 9.4% and was significantly higher among African Americans than among other racial/ethnic groups (Figure 22). In the 1994-1995 survey (N=675), HIV prevalence was 6.2% and was also higher among African American MSM. After statistical adjustment for age, ethnicity, residence, and site of recruitment, seroprevalence, and level of high risk sexual or drug use behaviors did not change significantly between the two surveys (Table 10).

**Figure 22. HIV Prevalence Among Young MSM by Race/Ethnicity, The Young Men's Survey, 1992-1993 and 1994-1995**



**Table 10. HIV Risk Behaviors Among Young MSM, The Young Men's Survey, 1992-1993 and 1994-1995**

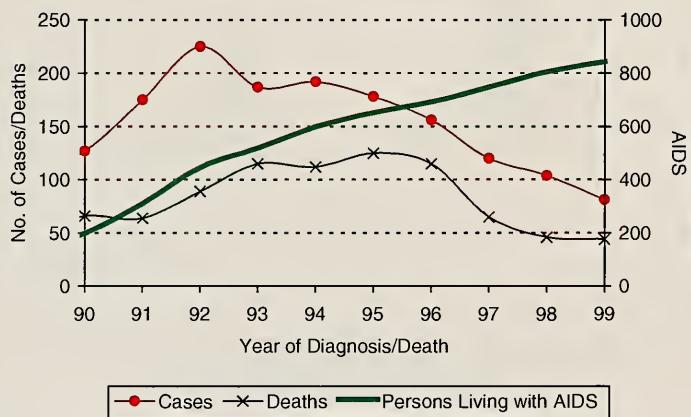
HIV Risk Behavior (past 6 months)	1992-1993 Survey (N=425)	1994-1995 Survey (N=675)
Unprotected receptive anal intercourse	23%	25%
Unprotected insertive anal intercourse	21%	25%
Unprotected oral intercourse	80%	79%
Sex while high	56%	53%
More than one partner	67%	66%
Injection drug use	8%	8%

## HIV/AIDS Among Injection Drug Users

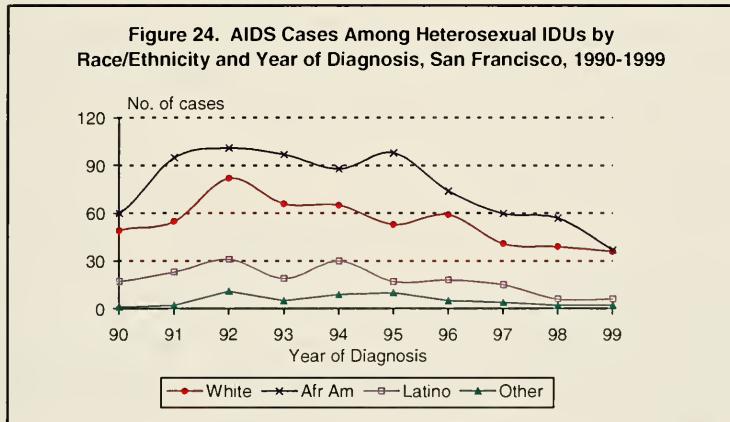
### *AIDS surveillance data*

Injection drug use by heterosexuals comprises the third most frequent exposure group for persons with AIDS in San Francisco, after MSM and MSM-IDU. The number of new AIDS cases among heterosexual IDU peaked in 1992 with 225 cases diagnosed that year (Figure 23). The number of deaths in this group plateaued between 1993 and 1996 and declined in 1997. The number of heterosexual IDU living with AIDS has increased to over 800 by 1999.

**Figure 23. AIDS Cases, Deaths, and Prevalence Among Heterosexual IDU by Year, San Francisco, 1990-1999**



African Americans account for the greatest number of heterosexual IDU AIDS cases (Figure 24). The number of new AIDS cases among African American heterosexual IDU plateaued between 1992 and 1995 and have declined since. However, among white heterosexual IDU AIDS cases, the number of new cases peaked sharply in 1992 and has declined since. Although the number of Latino heterosexual IDU AIDS cases are smaller than other race/ethnic groups, the trend in the number of new cases is similar to African Americans, demonstrating a less dramatic peak and decline than that observed among whites.



The proportion of injection drug use-associated AIDS differs by additional race and exposure categories (Table 11). Among MSM IDU and lesbian IDU, whites account for the greatest proportion of AIDS cases while African Americans account for the greatest proportion of AIDS cases among the other risk categories.

**Table 11. Injection Drug Use-Associated AIDS Cases by Exposure Category and Race/Ethnicity, Reported through December 1999, San Francisco**

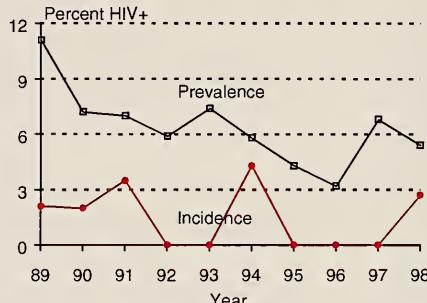
Exposure Category	No.	Race/Ethnic Distribution (%)				Asian/ Nat Am
		White	Afr Am	Latino		
Male heterosexual IDU	1,252	36%	48%	14%	2%	
Female heterosexual IDU	512	32%	53%	10%	5%	
MSM IDU	3,245	73%	15%	9%	3%	
Lesbian IDU	37	51%	33%	8%	8%	
Heterosexual contact with IDU	142	37%	42%	14%	7%	
Children whose mothers are IDUs or sex partners of IDUs	24	21%	58%	17%	4%	

## HIV seroprevalence and seroincidence data

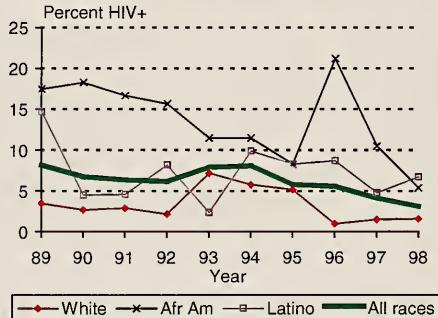
Information on the prevalence of HIV was obtained through annual blinded seroprevalence surveys conducted at the San Francisco municipal sexually transmitted disease clinic (City Clinic) and at methadone treatment programs between 1989 and 1998. Application of the dual HIV testing strategy to serum stored from these seroprevalence surveys provided information on the incidence of HIV infection in this population.

The prevalence of HIV infection among heterosexual injection drug users declined among STD clinic clients (Figure 25). The incidence of HIV among heterosexual IDU at the STD clinic fluctuated between 0 and 4% per year but did not demonstrate a significant temporal trend. Among clients at the methadone treatment programs, the HIV prevalence fluctuated among each race/ethnic group but the overall trend was of decreasing prevalence (Figure 26). HIV prevalence was higher among African Americans than among other race/ethnic groups. HIV seroincidence was very low in this in-treatment population (<0.1%) (data not shown).

**Figure 25. HIV Prevalence and Incidence Among IDUs Attending a STD Clinic by Year, San Francisco, 1989-1998**



**Figure 26. HIV Prevalence Among IDUs Attending Methadone Treatment Programs by Race/Ethnicity and Year, San Francisco, 1989-1998**

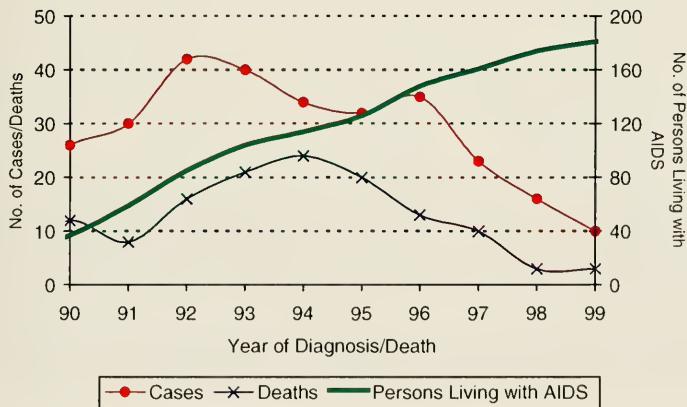


## HIV/AIDS Among Heterosexuals

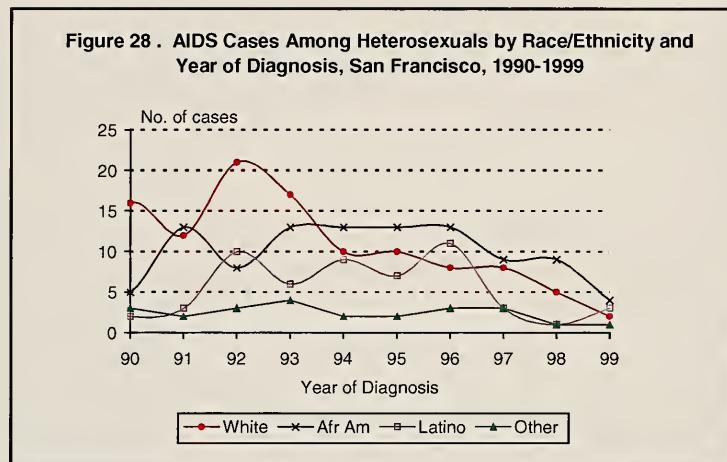
### *AIDS surveillance data*

The number of AIDS cases among persons who acquired HIV infection through heterosexual contact is small relative to other risk groups. The number of new AIDS cases in this group peaked in 1992 with 42 cases diagnosed that year (Figure 27). The number of deaths among heterosexual non IDU peaked in 1994 with 24 deaths occurring that year. The number of heterosexual non IDU living with AIDS has increased steadily to a total of 181 by the end of 1999.

**Figure 27. AIDS Cases, Deaths, and Prevalence Among Heterosexuals by Year, San Francisco, 1990-1999**



The number of new AIDS cases among African American heterosexual non-IDU plateaued between 1993 and 1996 and declined to a lower plateau in 1997 and 1998 (Figure 28). Among whites, the number of new AIDS cases peaked in 1992 and declined thereafter. In 1994, the number of new AIDS cases among African American heterosexual non IDU exceeded the number among whites. The number of new AIDS cases in this risk group remains highest among African Americans.



The majority of heterosexually acquired AIDS cases are women (Table 12). Of the 263 women in this group, 112 (42%) reported sex with an IDU. Among the 72 men in this risk group, 30 (42%) reported an IDU partner. Fifty-one percent of men and 35% of women reported sex with an HIV infected partner of unknown risk.

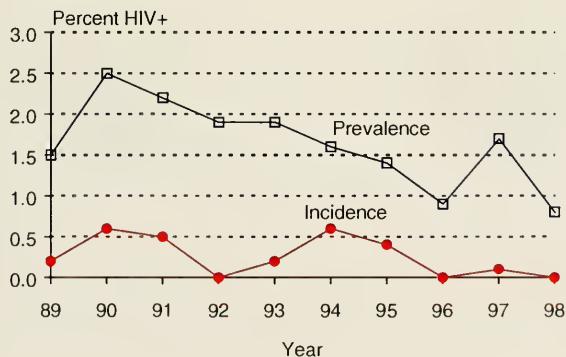
**Table 12. Heterosexually Transmitted AIDS by Exposure Category and Gender, Reported through December 1999, San Francisco**

Exposure Category	Men No. (%)	Women No. (%)
Sex with injection drug user	30 (42%)	112 (42%)
Sex with bisexual men	NA	52 (20%)
Sex with persons with hemophilia	0 (0%)	3 (1%)
Sex with transfusion recipient with HIV+	5 (7%)	5 (2%)
Sex with HIV+ person of unknown risk	37 (51%)	91 (35%)
<b>Total</b>	<b>72 (100%)</b>	<b>263 (100%)</b>

### **HIV seroprevalence and seroincidence data**

Information on the prevalence of HIV was obtained through annual blinded seroprevalence surveys conducted at the San Francisco municipal sexually transmitted disease clinic (City Clinic) between 1989 and 1998. Application of the dual HIV testing strategy to serum stored from these seroprevalence surveys provided information on the incidence of HIV infection in this population. The prevalence of HIV infection was less than 3% among heterosexual non-IDU patients at the STD clinic between 1989 and 1998 and declined from a high of 2.5% in 1990 to 0.8% in 1998 (Figure 29). The incidence of HIV was low in all the years (<1% per year).

**Figure 29. HIV Prevalence and Incidence Among Heterosexuals Attending a STD Clinic by Year, San Francisco, 1989-1998**

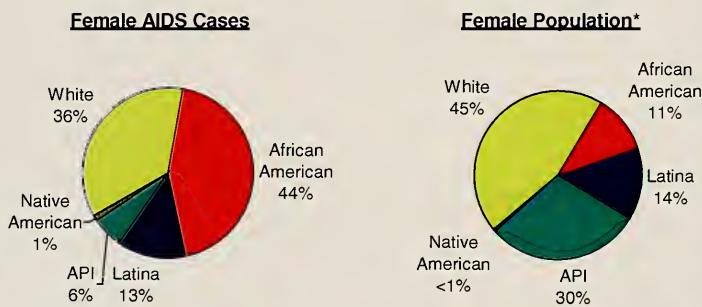


## HIV/AIDS Among Women

### *AIDS surveillance data*

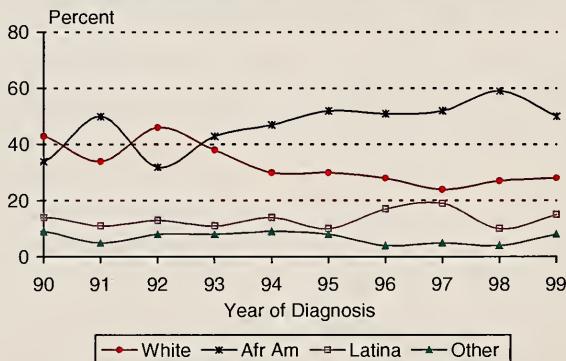
African American women comprise a disproportionate percent of the women with AIDS in San Francisco. Among female AIDS cases, 44% occurred among African Americans even though African American women comprise only 11% of the San Francisco population (Figure 30). The percent of new AIDS cases has been increasing among African American women relative to other race/ethnic groups (Figure 31).

**Figure 30. Female AIDS Cases Reported through December 1999, and Female Population by Race/Ethnicity, San Francisco**



\* 1990 census data.

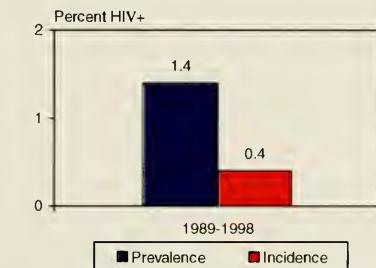
**Figure 31. Percent of Female AIDS Cases by Race/Ethnicity and Year of Diagnosis, San Francisco, 1990-1999**



## HIV seroprevalence and seroincidence data

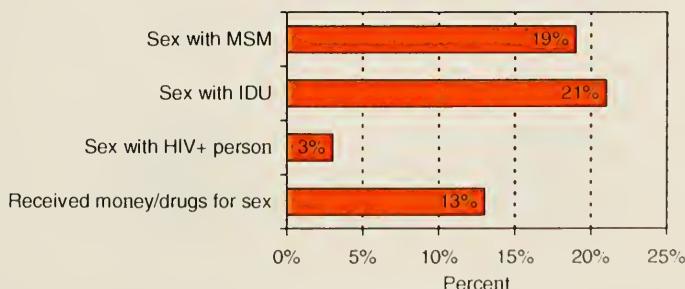
**STD clinic data:** Information on the prevalence of HIV was obtained through annual blinded seroprevalence surveys conducted at the San Francisco municipal sexually transmitted disease clinic (City Clinic) between 1989 and 1998. Application of the dual HIV testing strategy to serum stored from these seroprevalence surveys provided information on the incidence of HIV infection in this population. The prevalence of HIV infection was 1.4% among female patients at the STD clinic for the pooled period from 1989 to 1998. HIV incidence was 0.43% (Figure 32).

**Figure 32. HIV Prevalence and Incidence Among Women Attending a STD Clinic, San Francisco, 1989-1998**



**Young Women's Survey:** The Young Women's Survey (YWS), a population-based, door-to-door survey of women aged 18 to 29 years who resided in low-income neighborhoods, surveyed 2,547 women in five counties in the San Francisco Bay Area between April 1996 and January 1998 (18). HIV prevalence in this population was 0.3%. In San Francisco, four participants were HIV infected. Of whom, three were male-to-female transgendered. Of the YWS participants, 4% reported a lifetime history of injection drug use; 54% had shared injection paraphernalia with others. Ten percent of the YWS participants reported sex with a person who injected drugs, 5% had sex with a man who had sex with another man, and 1% had sex with someone with HIV or AIDS. Compared with YWS participants in other counties, San Francisco women had a higher percent of being tested for HIV (73%), ever injecting drugs (8%), ever sharing needles or works (67%), being threatened (35%) or forced (30%) to have sex, and having sex with risky partners (Figure 33).

**Figure 33. Risky Sexual Behaviors Among Young Women in San Francisco, The Young Women's Survey, 1996-1998**



**Survey of Childbearing Women:** Estimates of the prevalence of HIV infection among childbearing women were obtained through blinded HIV testing of newborns between 1989 and 1995. HIV antibodies in newborns reflect HIV infection in the mothers because of transfer of maternal HIV antibody during pregnancy. The presence of HIV antibody in the infants does not necessarily reflect newborn HIV infection since many of these infants will serorevert especially because the increased use of antiretroviral prophylaxis during pregnancy has markedly reduced the proportion of HIV-infected babies born to infected mothers. HIV prevalence among childbearing women ranged between a high of 36 per 10,000 births in 1991 to a low of 8 per 10,000 births in 1990 (Figure 34). HIV prevalence among childbearing women in San Francisco is low relative to other parts of the United States, and to the prevalence of HIV infection among high risk women in San Francisco.

**Figure 34 . HIV Prevalence Among Newborn Infants and Their Mothers, San Francisco, 1989-1995**



## HIV/AIDS Among Adolescents and Young Adults

### *AIDS surveillance data*

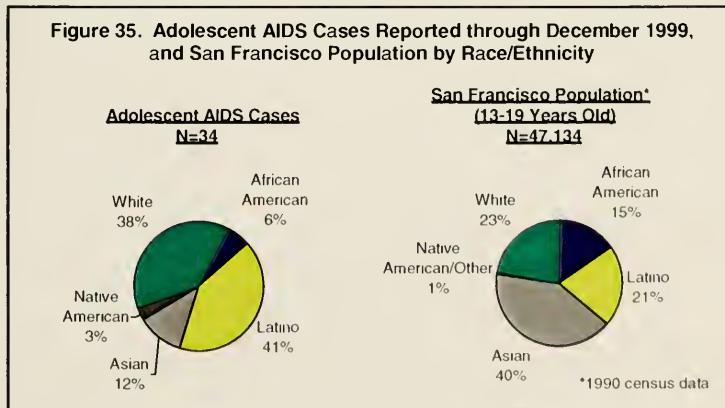
As of December 31, 1999, 34 AIDS cases in adolescents (aged 13-19 years) and 515 AIDS cases in young adults (aged 20-24 years) have been reported in San Francisco. Among adolescents with AIDS, 23% acquired HIV through transfusion of blood or blood components, 9% of infections were perinatally acquired, and 68% were acquired through sex or injection drug use (Table 13). The youngest age at AIDS diagnosis due to either sexual transmission or injection drug use is 17 years old. Males accounted for 88% of adolescent AIDS cases. Among young adults aged 20 to 24 years, the majority of AIDS cases are MSM (63%), followed by MSM-IDU (23%), and non-MSM IDU (8%). Ninety-four percent of young adult AIDS cases are male, 64% are white.

**Table 13. Adolescent and Young Adult AIDS Cases by Exposure Category, Gender, and Race/Ethnicity, Reported through December 1999, San Francisco**

	<b>13-19 Yrs (N=34)</b>	<b>20-24 Yrs (N=515)</b>
<b>Exposure Category</b>		
MSM	41%	63%
IDU	3%	8%
MSM & IDU	15%	23%
Transfusion/Hemophilia	23%	2%
Heterosexual	9%	3%
Perinatal	9%	0%
Unidentified	0%	1%
<b>Gender</b>		
Male	88%	94%
Female	12%	6%
<b>Race/Ethnicity</b>		
White	38%	64%
African American	6%	13%
Latino	41%	18%
Asian/Pacific Islander	12%	4%
Native American	3%	1%

Latinos (41%) and whites (38%) have the greatest representation among adolescent AIDS cases and are overrepresented when compared with the general adolescent population in San Francisco (Figure 35).

**Figure 35. Adolescent AIDS Cases Reported through December 1999, and San Francisco Population by Race/Ethnicity**



## HIV/AIDS Among Children

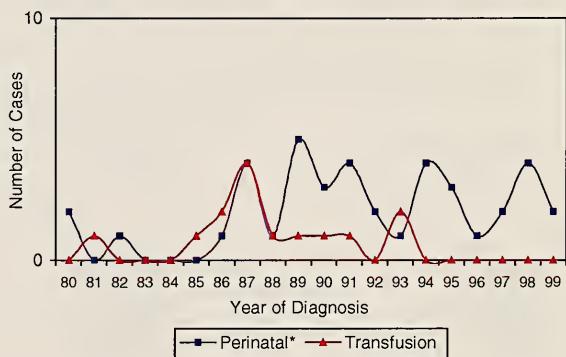
### *AIDS surveillance data*

The first pediatric AIDS case was diagnosed in San Francisco in 1980. Since that time, a cumulative total of 52 cases has been reported in children diagnosed at less than 13 years of age in San Francisco through December 31, 1999. The number of pediatric AIDS cases found in San Francisco is lower than other cities in the United States with comparable prevalence of AIDS. This is due primarily to the lower rate of HIV and/or AIDS in women of childbearing years in San Francisco compared with other cities (females represent only 4% of cumulative AIDS cases in San Francisco).

Forty persons diagnosed with AIDS in San Francisco have been classified as having acquired HIV infection perinatally (a few of these cases acquired HIV infection perinatally but were diagnosed with AIDS in adolescence). The incidence of perinatally acquired AIDS in San Francisco peaked at five cases in 1989 (Figure 36). National trends suggest that the incidence of perinatally acquired AIDS has decreased in recent years, following the implementation of Public Health Service guidelines for universal counseling and voluntary HIV testing of pregnant women and following the results of clinical trials (National Institutes of Health-sponsored AIDS Clinical Trials Group study 076) which demonstrated a 66% decrease in perinatal transmission (from 22.6% to 7.6%) with the use of zidovudine by pregnant women and their newborns.

The number of pediatric AIDS cases in which HIV was acquired through transfusions of blood or blood products decreased from a high of 50% of the cases diagnosed in children in 1987 to zero cases diagnosed in each year since 1994 (Figure 36).

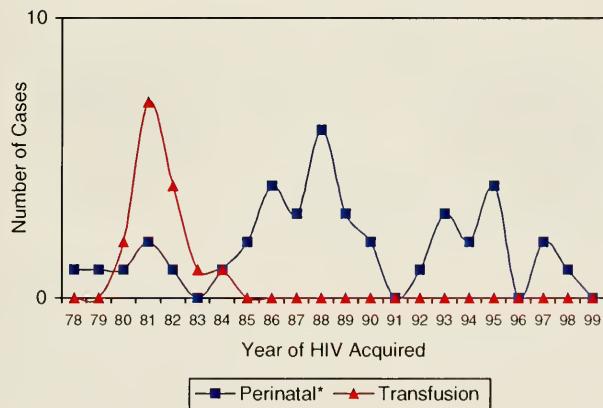
**Figure 36. Pediatric AIDS Cases by Exposure Category and Year of Diagnosis, San Francisco, 1980-1999**



\* Includes cases who acquired HIV perinatally but were diagnosed with AIDS in adolescence.

Evaluating trends of pediatric AIDS cases by the year of HIV infection acquired (year of transfusion for transfusion-associated AIDS and year of birth for perinatally acquired AIDS) instead of the year of diagnosis illustrates the impact of universal blood donor screening in 1985 and treatment of blood products. Prior to 1985, 68% of the pediatric AIDS cases acquired HIV through transfusion of blood or blood components or from receipt of clotting factor for hemophilia or other coagulation disorder, and 32% were presumed to have perinatally acquired HIV. After 1985, all cases acquired HIV through perinatal transmission (Figure 37).

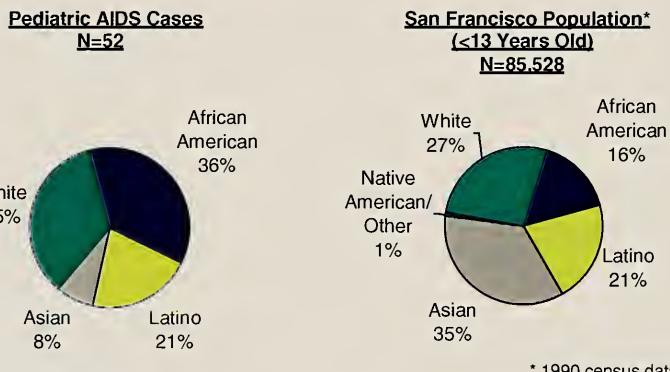
**Figure 37. Pediatric AIDS Cases by Exposure Category and Year of HIV Acquired, San Francisco, 1978-1999**



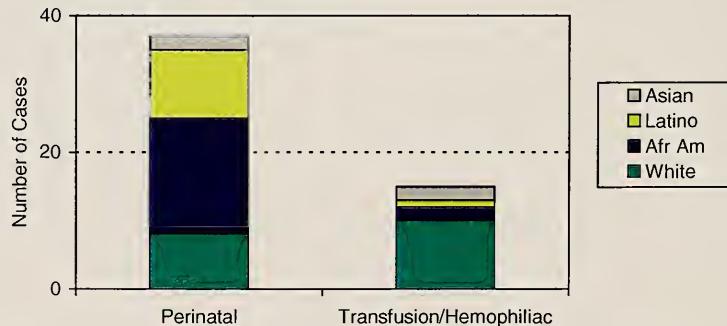
\* Includes cases who acquired HIV perinatally but were diagnosed with AIDS in adolescence.

Proportionally, African American children are overrepresented among pediatric AIDS cases (36%) when compared with the general pediatric population in San Francisco (16%) (Figure 38). White children represent the majority (67%) of the San Francisco pediatric AIDS cases in which HIV was acquired through transfusion of blood or blood components (Figure 39). African American children represent the majority (46%) of the pediatric AIDS cases in which HIV was acquired perinatally.

**Figure 38. Pediatric AIDS Cases, Reported through December 1999, and San Francisco Population by Race/Ethnicity**



**Figure 39. Pediatric AIDS Cases by Exposure Category and Race/Ethnicity, Reported through December 1999, San Francisco**



Forty-two percent of pediatric AIDS cases were diagnosed within the first year of life (Table 14). Pediatric AIDS cases are distributed evenly between males and females (50%). In contrast, adolescent and adult AIDS cases are predominantly males (88% in adolescents with AIDS and 96% in adults with AIDS, respectively).

By the end of 1999, 15 pediatric AIDS cases were living, all children born to a mother with AIDS or with known risk factors for HIV (Table 14). The majority of living pediatric AIDS cases are African American (53%), followed by Latino (33%), and white (13%). These living children with AIDS range in age from one to 20 years old. Given that pediatric perinatally acquired AIDS cases are now living through adolescence and beyond, preventive strategies to reduce the transmission of HIV among adolescents, such as discussing safe sexual practice and establishing programs to prevent and treat substance use, should be instituted.

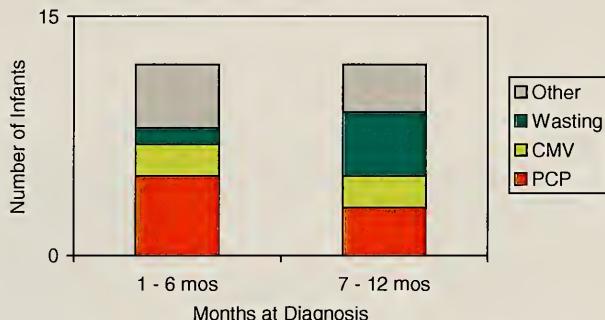
**Table 14. Percent of Cumulative and Living Pediatric AIDS Cases by Exposure Category, Gender, Race/ Ethnicity and Age, San Francisco, December 1999**

	<b>Cumulative Pediatric AIDS Cases (N=52)</b>	<b>Living Pediatric AIDS Cases (N=15)</b>
<b>Exposure Category</b>		
Transfusion/Hemophilia	29%	0%
Perinatal	71%	100%
<b>Gender</b>		
Male	50%	33%
Female	50%	67%
<b>Race/Ethnicity</b>		
White	35%	13%
African American	36%	53%
Latino	21%	33%
Asian/Pacific Islander	8%	0%
<b>Age* (years)</b>		
Less than 1	42%	0%
1-5	35%	47%
6-12	23%	33%
13-20	NA	20%

\* Age at AIDS diagnosis for cumulative cases and age as of December 1999 for living cases.

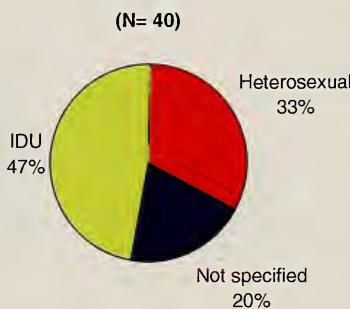
The most commonly reported initial AIDS-defining illness among children <13 years old is *Pneumocystis carinii* pneumonia (PCP) (23%), followed by cytomegalovirus disease (15%) and HIV wasting syndrome (15%). The AIDS-defining illness for the majority of the perinatally acquired cases who were diagnosed between one to six months of age was PCP (Figure 40). These data support the current recommendations for HIV-exposed infants to receive PCP prophylaxis beginning at six weeks of age.

**Figure 40. Initial AIDS-Defining Illnesses Among Infants (0-12 months) with Perinatally-Acquired AIDS, Reported through December 1999, San Francisco**



Among perinatally acquired AIDS cases, 47% of their HIV-infected mothers had acquired HIV from injection drug use, 33% had acquired HIV through a heterosexual HIV-infected partner, and 20% did not have a risk reported (Figure 41).

**Figure 41. Cumulative Perinatally Acquired AIDS Cases by Mother's Exposure Category, Reported through December 1999, San Francisco**

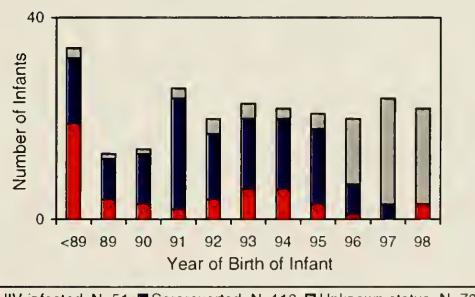


## Perinatal HIV data

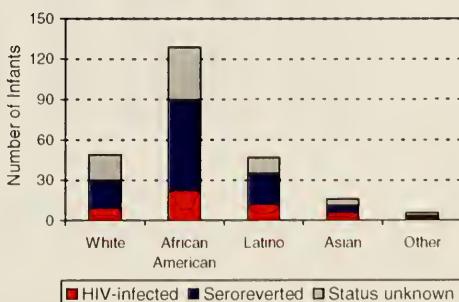
Although HIV is not a reportable condition, data on HIV in San Francisco are gathered through the Pediatric Spectrum of Disease (PSD) project. The PSD project was established in 1989 by the Centers for Disease Control and Prevention and collects data from eight areas throughout the United States, including Northern California (19). In Northern California, hospital surveillance for children less than 13 years old infected with HIV or for infants born to infected mothers has occurred at eight pediatric hospitals (including University of California at San Francisco and San Francisco General Hospital) (20). Records from HIV positive pediatric patients cared for through the California Children's Services program, a state agency providing funding and case management for HIV-positive children, are also included in the PSD project. A perinatal HIV exposure case was defined as a child less than or equal to 12 years old born to a mother documented to have HIV before delivery and without a history of blood or blood product transfusion before 1985.

Through 1998, 247 infants have been born to HIV-infected mothers in San Francisco and, thus, have been exposed to HIV. Twenty-one percent of these infants have been confirmed HIV-infected, 48% have seroreverted, and 32% are of unknown HIV status (Figure 42). Since 1992, between 20 and 24 deliveries of perinatally exposed infants have occurred each year in San Francisco, predominantly at the San Francisco General Hospital (the sole county hospital with maternity services). Of these infants, the majority (52%) are African American, followed by white (20%) and Latino (19%) (Figure 43).

**Figure 42. Infants Born to HIV-Infected Mothers by Year of Birth and Infant's HIV Status, San Francisco, through 1998**

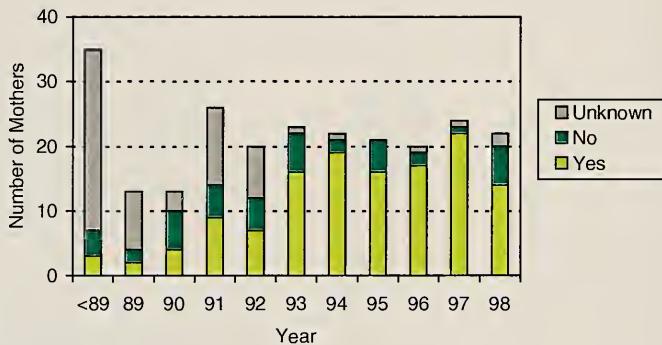


**Figure 43. Infants Born to HIV-Infected Mothers by Infant's Race/Ethnicity and HIV Status, San Francisco, through 1998**

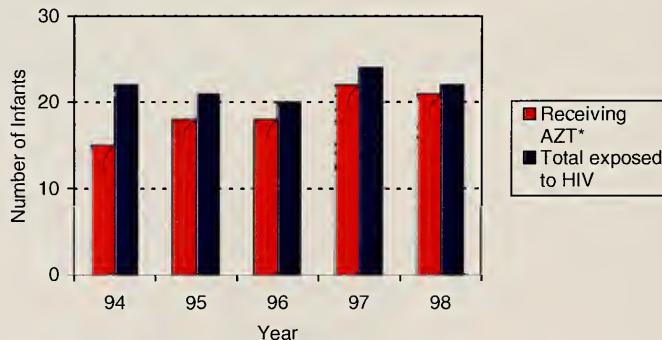


The majority of HIV-infected mothers received some form of prenatal care during their pregnancy (Figure 44). In 1998, 95% of HIV-exposed infants received AZT or other therapy, in contrast to data collected in 1994, when only 68% of exposed infants received AZT or other therapy (Figure 45). Currently, an estimated 60 HIV-infected children (<13 years old) are living in San Francisco.

**Figure 44. HIV-Infected Mothers Receiving Prenatal Care by Year, San Francisco, through 1998**



**Figure 45. Infants Born to HIV-Infected Mothers and Receiving AZT\* After Delivery, San Francisco, 1994-1998**



\* Includes AZT or other combination antiretroviral therapy.

## Transgender

### *AIDS surveillance data*

Persons with AIDS are categorized as transgender if information regarding changes in gender identity is listed in the medical record. Information on transgender has been collected since 1996. As of December 31, 1999, a total of 215 transgender AIDS cases have been reported (Table 15). Comparison of transgender AIDS cases to the total number of AIDS cases reported through December 1999 demonstrates some important differences. Sixty-nine percent of transgender cases were nonwhite compared to 25% of total AIDS cases. Transgender persons with AIDS were more likely to inject drugs than were total AIDS cases (51% and 19%, respectively). Transgender AIDS cases were also younger than total AIDS cases.

**Table 15. Characteristics of Transgender\* AIDS Cases and Cumulative AIDS Cases Reported through December 1999, San Francisco**

	<b>Transgender AIDS Cases Reported through December 1999 (N=215)</b>	<b>AIDS Cases Reported through December 1999 (N=26,616)</b>
<b>Race/Ethnicity</b>		
White	31%	75%
African American	31%	12%
Latino	28%	10%
Asian/Pacific Islander	9%	3%
Native American	<1%	<1%
<b>Exposure Category</b>		
MSM <sup>†</sup>	48%	78%
IDU	3%	7%
MSM & IDU	48%	12%
Other	<1%	3%
<b>Age at Diagnosis</b>		
0-19	<1%	<1%
20-29	28%	12%
30-39	46%	46%
40-49	21%	31%
50+	5%	11%

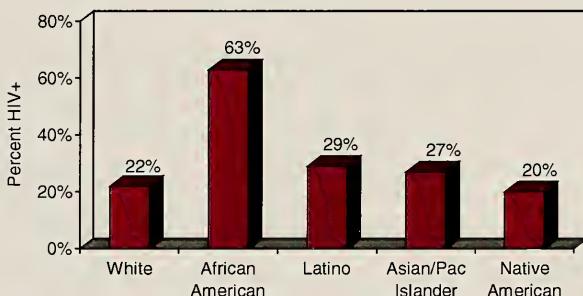
\* See Technical Notes 'Transgender Status'.

† Male-to-female transgender who reported sex with a male partner.

## *The Transgender Community Health Project*

An anonymous cross-sectional HIV prevalence survey was conducted between July 1997 and December 1997 to assess HIV risk among transgendered persons in San Francisco (21). Of the 392 male-to-female (MTF) transgendered individuals surveyed, over one third (35%) were infected with HIV. Among African American, almost two thirds (63%) were HIV positive (Figure 46). MTF individuals reported high levels of lifetime HIV risk behaviors including: unprotected receptive anal sex, sex work, and injection drug use (Table 16). The HIV prevalence and the level of risk behaviors were lower among female-to-male (FTM) participants. However, a history of unsafe receptive anal sex was reported by 28% of FTM participants, and among those who reported a history of injection drug use, 91% shared syringes.

**Figure 46. HIV Prevalence by Race/Ethnicity Among 392 Male-to-Female Transgendered Persons, The Transgender Community Health Project, San Francisco**



**Table 16. HIV Prevalence and Risk Behaviors Among Transgendered Persons, The Transgender Community Health Project, San Francisco**

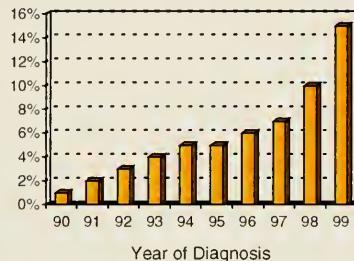
	Male-to-Female Transgender (N=392)	Female-to-Male Transgender (N=123)
<b>HIV Prevalence</b>	35%	2%
<b>Injection Drug Use (IDU) Behaviors</b>		
Lifetime IDU	34%	18%
Recent IDU (6 month)	18%	4%
<b>Lifetime Sexual Behaviors</b>		
Median No. of sex partners	150	27
Unprotected receptive anal sex	85%	28%
Unprotected insertive anal sex	64%	NA
Unprotected receptive vaginal sex	6%	64%
Sex work/Survival Sex	80%	31%
Forced sex/Rape	59%	59%

## Homeless Persons

### *AIDS surveillance data*

Information on homelessness among persons diagnosed with AIDS has been collected since 1990. The proportion of persons with AIDS who are homeless at the time of diagnosis has been increasing each year since 1990 (Figure 47). By 1999, 15% of AIDS cases were homeless at the time of diagnosis. Compared to the total number of AIDS cases diagnosed between 1990 and 1999, homeless persons with AIDS were more likely to be women, nonwhite, injection drug users, and younger (Table 17).

**Figure 47. Percent of Homeless AIDS Cases by Year of Diagnosis, San Francisco, 1990-1999**



**Table 17. Characteristics of Homeless AIDS Cases and AIDS Cases Diagnosed Between 1990 and 1999, San Francisco**

	Homeless AIDS Diagnosed 1990-1999 (N=734)	AIDS Cases Diagnosed 1990-1999 (N=16,880)
<b>Gender</b>		
Male	87%	95%
Female	13%	5%
<b>Race/Ethnicity</b>		
White	45%	71%
African American	38%	14%
Latino	14%	12%
Other	2%	4%
<b>Exposure Category</b>		
MSM	22%	75%
IDU	43%	9%
MSM & IDU	31%	12%
Other	4%	3%
<b>Age at Diagnosis</b>		
0-19	<1%	<1%
20-29	21%	11%
30-39	46%	45%
40-49	27%	32%
50+	6%	11%

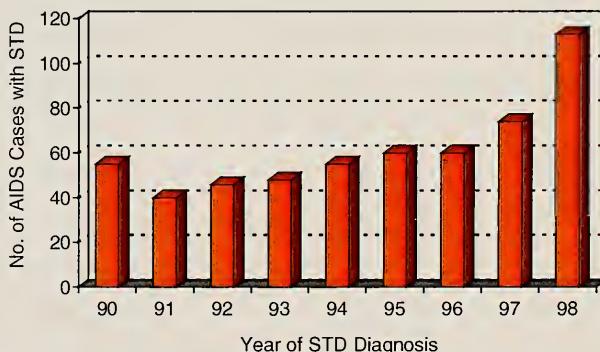
## Sexually Transmitted Diseases (STD) and HIV Infection

### *AIDS surveillance data*

Diagnosis of STD occurring among persons with AIDS was determined through a computerized match of the AIDS and STD case registry. A match was verified by name, date of birth, and gender. The STD registry included persons reported with gonorrhea, chlamydia, nongonococcal urethritis, or infectious syphilis. Between 1990 and 1998, 437 people with AIDS were also diagnosed with a STD, with a peak of 113 cases in 1998 (Figure 48).

Predictors of acquiring a STD after AIDS diagnosis in the era of highly active antiretroviral therapy (HAART) were examined among the 11,832 persons living with AIDS after 1994. Of these, 2% were diagnosed with a STD following AIDS diagnosis. Those taking HAART were more likely to acquire a STD after their AIDS diagnosis than persons with AIDS who were not taking HAART. Those who were less than 25 years old at AIDS diagnosis were over four times as likely to have acquired a STD after AIDS diagnosis as those older than 25. Diagnosis of a STD after AIDS was also associated with a higher CD4 cell count at time of AIDS diagnosis.

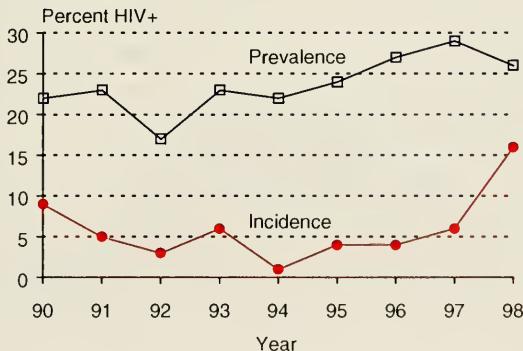
**Figure 48. Number of AIDS Cases Diagnosed with a STD by Year of STD Diagnosis, San Francisco, 1990-1998**



### ***HIV seroprevalence and seroincidence data***

Information on the prevalence of HIV was obtained through annual blinded seroprevalence surveys conducted at the San Francisco municipal sexually transmitted disease clinic (City Clinic). Application of the dual HIV testing strategy to serum stored from these seroprevalence surveys provided information on the incidence of HIV infection in this population. Information on diagnosis of gonorrhea was collected between 1990 and 1998. Among patients who were diagnosed with gonorrhea at the time of blinded HIV testing, the overall HIV prevalence was 23.7% and increased from 21.6% in 1990 to 26% in 1998 (Figure 49). The overall HIV seroincidence among patients diagnosed with gonorrhea was 6% per year and increased from 9.4% in 1990 to 15.8% in 1998.

**Figure 49. HIV Prevalence and Incidence Among STD Clinic Patients Diagnosed with Gonorrhea by Year, San Francisco, 1990-1998**

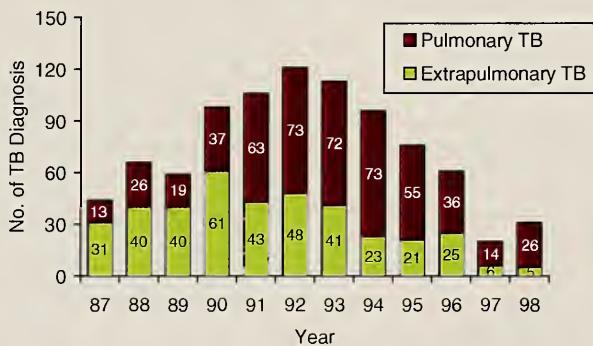


## Tuberculosis Among Persons with AIDS

The number of persons with tuberculosis (TB) and AIDS peaked at 121 cases in 1992 and declined to 31 cases in 1998 (Figure 50). Similar declines have been observed in citywide TB cases.

In contrast to all AIDS cases, women accounted for a greater percent of persons with TB and AIDS (7%) than that of all AIDS cases (4%). Fifty-three percent of AIDS cases with TB were persons of color compared to 25% of total AIDS cases. Fifty-six percent of the AIDS cases with TB were MSM, followed by 23% MSM IDU and 16% heterosexual IDU.

**Figure 50. Diagnosis of Tuberculosis (TB)\* Among Persons with AIDS by Year, San Francisco, 1987-1998**



\* A person may have both pulmonary and extrapulmonary TB diagnosed in the same or different year.

HIV infection is known to increase the risk of progression from TB infection to active TB disease. All persons who are HIV positive or at risk for HIV infection should be screened for TB. In order to evaluate the missed opportunities to prevent TB in persons with AIDS, we conducted medical chart review to collect additional information on TB screening. Of the 414 persons diagnosed with AIDS in 1999, 194 (47%) received a TB screening test sometime after diagnosis of HIV (Table 18).

**Table 18. TB Screening Test After HIV Infection Among Persons Diagnosed with AIDS in 1999, San Francisco**

Had a TB Screening Test After HIV Infection (N=194)		Did Not Have a TB Screening Test After HIV Infection (N=220)	
Type	No. (%)	Reason for Not Testing	No. (%)
Tuberculin skin test	150 (77%)	Not documented	197 (90%)
X ray	34 (18%)	Previous TB test or TB	13 ( 6%)
Other	10 ( 5%)	Refused	4 ( 2%)
<b>Reason for Testing</b>		Lost-to-follow-up/Died	3 ( 1%)
Routine screening	155 (80%)	Other	3 ( 1%)
Symptoms suggestive of TB	28 (14%)		
Other/Unknown	11 ( 6%)		

**Table 19. Percent of Persons Diagnosed with AIDS in 1999 Who Had Tested for TB After HIV Infection, San Francisco**

	AIDS Cases in 1999 <sup>1</sup>	Percent Tested for TB
<b>Total</b>	414	47%
<b>Gender</b>		
Male	376	45%
Female	38	58%
<b>Race/Ethnicity</b>		
White	245	40%
African American	75	60%
Latino	69	57%
Asian/Native American	25	40%
<b>Risk for HIV</b>		
MSM	268	40%
IDU	73	60%
MSM & IDU	49	65%
Other	24	38%
<b>Diagnosing Facility<sup>2</sup></b>		
Public	217	61%
Private	154	30%
University/Military	38	34%

1. Excludes cases for whom chart review is not available.

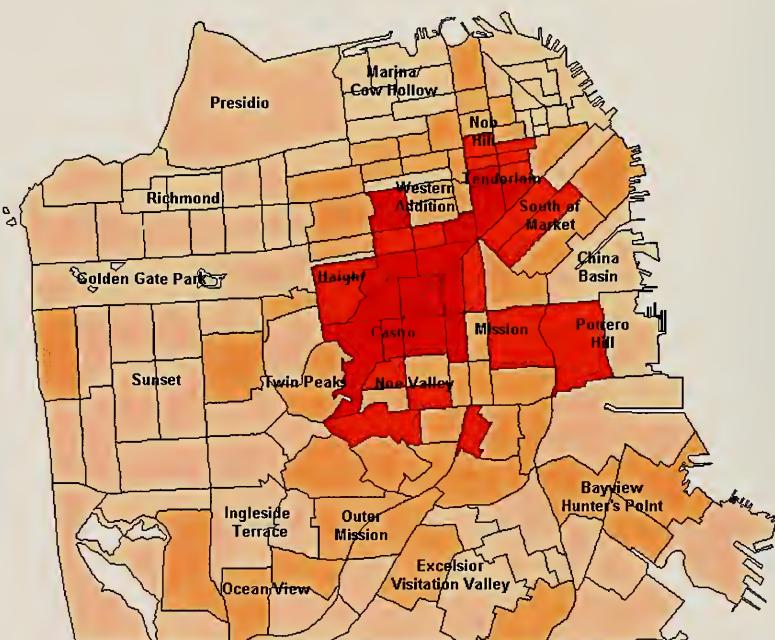
2. Excludes persons who were diagnosed at facility outside of San Francisco.

Of those who did not have a TB screening test, the majority (90%) had no reason documented in the medical records. Women, people of color, injection drug users, and persons who were diagnosed at public health settings were more likely to have had a TB screening test (Table 19).

## Geographic Distribution of AIDS

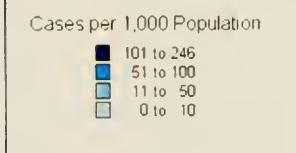
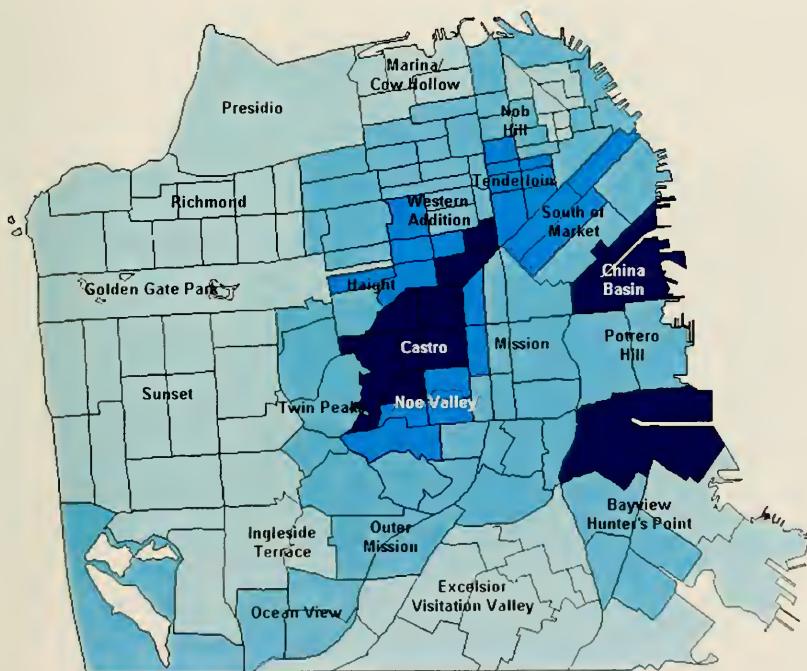
The AIDS epidemic center is located in the Castro, Western Addition, and Tenderloin neighborhoods of San Francisco where the number of persons living with AIDS is the greatest (101 to 268 living cases per census tract) (Map 1). The areas immediately surrounding these neighborhoods are also home to large numbers of people living with AIDS, including the Mission, Noe Valley, South of Market, Nob Hill, and Haight Ashbury neighborhoods (with 51 to 100 living cases per census tract). Thus, in general, the epicenter of the AIDS epidemic in San Francisco has remained largely in the inner-city areas in the eastern part of the city, while the more residential areas in the western part of the city remain relatively less affected.

**Map 1. Number of Persons Living with AIDS by Census Tract, San Francisco, December 1999**



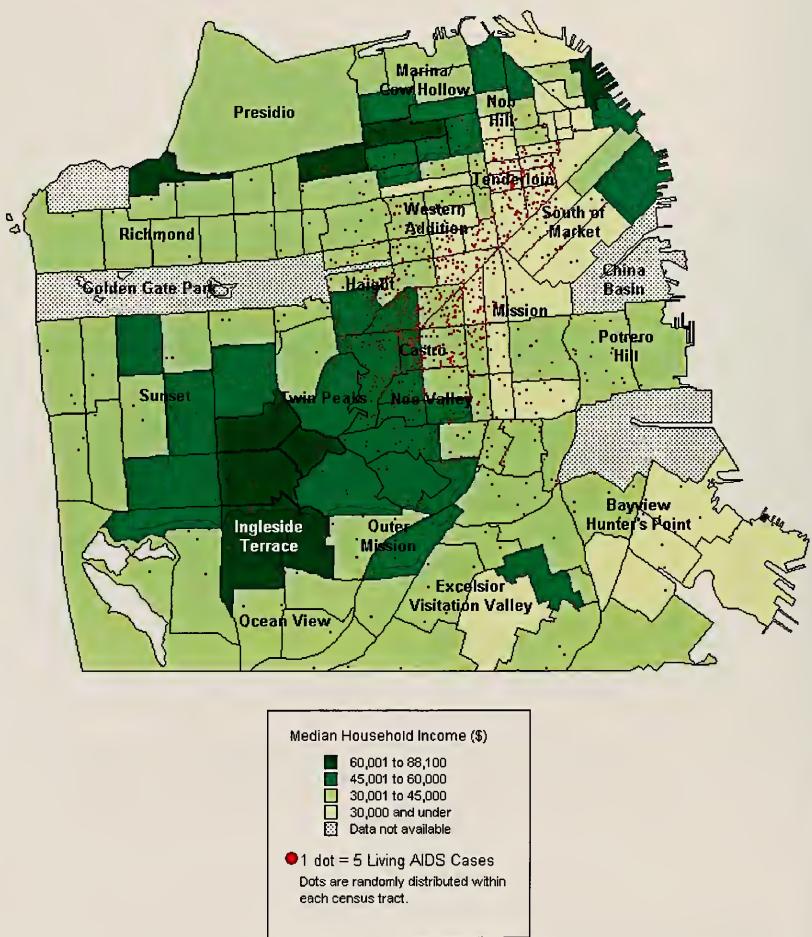
Map 2, showing the cumulative AIDS incidence per 1,000 population by census tract, suggests that the AIDS epidemic may be spreading from the core epicenter towards additional neighborhoods such as Bayview Hunter's Point and China Basin.

**Map 2. Cumulative AIDS Incidence Rates per 1,000 Population  
by Census Tract, San Francisco, December 1999**



With the exception of the relatively affluent Castro and Noe Valley neighborhoods, many persons living with AIDS are clustered in low income neighborhoods with median household incomes under \$30,000 (Map 3). Low income neighborhoods with a high burden of AIDS include the Tenderloin and South of Market.

**Map 3. Living AIDS Cases and Median Household Income by Census Tract, San Francisco, December 1999**



## **Technical Notes**

### **AIDS Incidence Rates**

Annual race-specific rates are calculated as the number of cases diagnosed for a particular racial/ethnic group during each year divided by the population for that race/ethnicity, multiplied by 100,000. These rates are calculated separately for males and females. Population denominators are based on the 1990 census data.

Estimated annual risk-specific rates are calculated as the number of cases diagnosed for a particular risk group during each year divided by the estimated population for that risk group, multiplied by 1,000. Estimates of population denominators are based on the 1997 HIV Consensus Report, compiled by a local panel of experts and published by the San Francisco Department of Public Health, HIV Seroepidemiology Unit (1).

### **AIDS Survival**

Survival was calculated as the time between the date of first AIDS-defining opportunistic illness (AIDS-OI) and the date of death. Persons who met only the 1993 AIDS case definition (largely CD4 count <200 or percent <14%) were not included until they developed an AIDS-OI. The occurrence of AIDS-OI and follow-up information of cases was obtained through retrospective and prospective reviews of laboratory records and medical charts. Dates of death were obtained through review of local death certificates and matches with the National Death Index (NDI). The most recent NDI match included deaths occurred through December 31, 1997. Persons not known to have died were censored at the date of their last known follow-up or at December 31, 1997, whichever was more recent. The median months of survival by year of AIDS-OI is presented only through 1996 because longer follow-up time is needed for persons diagnosed with an AIDS-OI in 1997 or later. Similar methods were used in previous published analysis of AIDS survival (2,22).

### **Causes of Death**

Cause of death information on death certificates is coded using the International Classification of Diseases, 9<sup>th</sup> Revision (ICD-9) by state nosologists or nosologists at the National Center for Health Statistics. These codes are then processed and evaluated using a computer system to determine the underlying and contributory causes of death. We obtained the ICD-9 coded causes of death from the California multiple-cause-of-death computer tape for persons with AIDS who died prior to 1996. For AIDS deaths that occurred in 1996 and 1997, the cause of death information was obtained through the match with the National Death Index. Deaths attributable to HIV infection or AIDS are coded as 042-044. In addition, the following conditions, if listed on the death certificates, are included as 'AIDS defining conditions': candidiasis, cervical cancer, coccidioidomycosis, cryptococcosis, cryptosporidiosis, cytomegalovirus, HIV encephalopathy, herpes simplex, histoplasmosis, isosporiasis, Kaposi's sarcoma, lymphoid interstitial pneumonia, lymphomas, mycobacterial infections, pulmonary tuberculosis, extrapulmonary

tuberculosis, *Pneumocystis carinii* pneumonia, progressive multifocal leukoencephalopathy, salmonella sepsis, toxoplasmosis, HIV wasting.

### **Grouping of Data Categories**

Data regarding certain race/ethnic or risk categories are grouped together when the number of persons with HIV/AIDS in that particular group is small and/or does not present significant trends. For example, 'Other' in Race/Ethnicity breakdown represents Asian/Pacific Islander and Native American; 'Other' in Exposure Category breakdown includes transfusion, hemophilia, heterosexual, perinatal AIDS, or persons of unidentified risk.

### **HIV Seroprevalence and Seroincidence Surveys**

The San Francisco Department of Public Health HIV Seroepidemiology Unit has conducted unlinked HIV prevalence surveys in selected clinics in San Francisco serving populations at high risk for HIV infection. Settings included the municipal sexually transmitted disease (STD) clinic and methadone treatment programs. Residual blood specimens originally collected for routine clinical purposes are tested for HIV antibodies after all personal identifying information has been removed from the specimen. Neither HIV test results nor risk information can be linked to individuals. Detailed descriptions of these surveys have been described elsewhere (5,6,11,12).

HIV seroincidence was derived by applying a newly described HIV testing strategy that can distinguish recent infections from long-standing infections (13) to HIV positive specimens that were collected in the seroprevalence surveys and from anonymous voluntary HIV counseling and testing sites. Retested HIV-positive specimens that were nonreactive on the less sensitive assay were defined as recent HIV infections. HIV incidence was calculated as the number of recent infections divided by the number of recent infections plus the number of HIV negative specimens. HIV incidence, expressed as percent per year, was estimated by multiplying the rate of recent infection by  $(365 \div 129) \times 100$ .

### **Transgender Status**

One population that has traditionally been overlooked in reports of AIDS surveillance is persons who self-identify as transgender. Traditionally, under gender, transgendered persons have been coded by their biological gender. In San Francisco we recognize the unique identity of transgendered individuals and the need to correct this historical oversight. In September 1996, the San Francisco Health Department began noting transgender status when this information is contained in the medical record. Transgendered individuals are listed as either male-to-female or female-to-male. Please note that there are several limitations to our transgender data. We believe that our report likely underestimates the number of transgendered persons affected by AIDS because data collected for AIDS reporting are derived from the medical record. Consequently, information that may be discussed with the health care provider but that is not recorded in the medical record is generally not available for the purposes of AIDS case reporting. Because we did not collect information about transgender status in a uniform way until

the medical record is generally not available for the purposes of AIDS case reporting. Because we did not collect information about transgender status in a uniform way until September 1996, we have limited data on transgender prior to this, and therefore cannot perform valid time trend analysis for this group.

### **Treatments**

The type and starting date of HIV antiretroviral therapy and prophylaxis against *Pneumocystis carinii* pneumonia or *Mycobacterium avium* complex is obtained at time of initial case report and through retrospective and prospective reviews of medical records. Persons noted to have received a protease inhibitor or a nonnucleoside reverse transcriptase inhibitor were considered to have received highly active antiretroviral therapy (HAART). Use of HIV therapies among persons living with AIDS by year was calculated as the number of persons who were alive at the end of each year and who started the treatment during that year, divided by the total number of persons living with AIDS at the end of each year. Use of HAART among persons living with AIDS by gender, race/ethnicity, and risk was calculated as the number of persons living with AIDS as of December 31, 1999, for each gender, race, or risk group who were noted to have ever received HAART, divided by the total number of persons living with AIDS as of December 31, 1999, for each gender, race, and risk group. Persons who were diagnosed at a facility outside of San Francisco and persons whose treatment information is not available were excluded.



## References

1. Page-Shafer K, McFarland W, Katz, MH. 1997 HIV consensus report on HIV Prevalence and Incidence in San Francisco. San Francisco Department of Public Health. 1998.
2. Schwarcz SK, Hsu LC, Vittinghoff E, Katz MH. The impact of protease inhibitors and other antiretroviral treatments on AIDS survival in San Francisco, 1987-1996. *Am J Epidemiol* 2000 (in press).
3. Scheer S, Chu P, Klausner J, Katz M, Schwarcz S. STD diagnoses among persons with AIDS: Evidence of an adverse effect of highly active antiretroviral therapy. (submitted, under review).
4. Page-Shafer K, McFarland W, Scheer K, Kohn R, Klausner J, Katz MH. Increasing HIV risk behavior and sexually transmitted disease rates in the interval of improved efficacy of antiretroviral therapy regimens, San Francisco, 1994-1997. *MMWR* 1999; January 29;48(3):46-48.

Seroprevalence and seroincidence surveys:

5. Dondero TJ, Pappaioanou M, Curran JW. Monitoring the levels and trends of HIV infection: the Public Health Service's HIV Surveillance Program. *Public Health Rep* 1990;103:213-220.
6. Pappaioanou M, Dondero TJ Jr., Peterson LR, et al. The family of HIV seroprevalence surveys: objectives, methods, and uses of sentinel surveillance for HIV in the United States. *Public Health Rep* 1990;105:113-119.
7. Weinstock H, Sweeney S, Satten GA, Gwinn M, for the STD Clinic HIV Seroincidence Study Group. HIV seroincidence and risk factors among patients repeatedly tested for HIV attending sexually transmitted disease clinics in the United States, 1991-1996. *J Acquir Immune Defic Syndr* 1998;19:506-512.
8. Osmond DH, Charlebois E, Page-Shafer KA, et al. HIV seroconversion rates in the San Francisco Young Men's Health Study: 1993-1996. 11th International Conference on AIDS, Vancouver, July 7-12, 1996 (Abstract No. We.C.562).
9. Osmond D, Page KA, Wiley J, Garrett K, et al. Human immunodeficiency virus infection in homosexual/bisexual men, ages 18-29: The San Francisco Young Men's Health Study. *Am J Public Health* 1994;84:1933-1937.
10. McFarland W, Busch MP, Kellogg TA, Rawal BD, Satten GA, Katz MH, Dilley JD, Janssen RS. Detection of early HIV infection and estimation of HIV incidence using a sensitive/less sensitive testing strategy at anonymous counseling and testing sites in San Francisco. *J Acquir Immune Defic Syndr* 1999;22:484-489.
11. Schwarcz SK, Kellogg TA, Kohn RP, Katz MH, Lemp GF, Bolan GA. Temporal trends in HIV seroprevalence and sexual behaviors at a municipal sexually transmitted disease clinic, 1989-1992. *Am J Epidemiol* 1995;142:314-322.
12. McFarland W, Kellogg TA, Louie B, Murrill C, Katz MH. Low estimates of HIV seroconversion among clients of a drug treatment clinic in San Francisco, 1995 to 1998. *J Acquir Immune Defic Syndr* 2000 (in press).

13. Janssen RS, Satten GA, Stramer SL, *et al.* New testing strategy to detect early HIV-1 infection for use in incidence estimates and for clinical and prevention purposes. *JAMA* 1998;280:42-48.

HAART decreases morbidity and mortality:

14. Detels R, Munoz A, McFarlane G, *et al.* Effectiveness of potent antiretroviral therapy on time to AIDS and death in men with known HIV infection duration. *JAMA* 1998;280:1497-1503.
15. Palella FJ, Delaney KM, Moorman AC, *et al.* Declining morbidity and mortality among patients with advanced human immunodeficiency virus infection. *New Engl J Med* 1998;338:853-860.

Young Men's Survey:

16. Lemp GF, Hirozawa AM, Givertz D, *et al.* Seroprevalence of HIV and risk behaviors among young homosexual and bisexual men. *JAMA* 1994;272:449-454.
17. Katz MH, McFarland W, Guillen V, *et al.* Continuing high prevalence of HIV and risk behaviors among young men who have sex with men: the Young Men's Survey in the San Francisco Bay Area in 1992 to 1993 and in 1994 to 1995. *J Acquir Immune Defic Syndr* 1998;19:178-181.

Young Women's Survey:

18. Ruiz J, Molitor F, Parikh-Patel A. HIV, hepatitis, STDs, and related risk behaviors among young women residing in low income neighborhoods in Northern California, April 1996-January 1998. California Department of Health Services, Prevention Services, Office of AIDS, HIV/AIDS Epidemiology Branch.

Perinatal HIV data:

19. Maldonado, Yvonne and the Northern California Pediatric HIV Consortium. The Northern California Pediatric HIV Consortium and the Pediatric Spectrum of Disease Project. *California HIV/AIDS Update*. October 1996;Vol 9, No 4.
20. Maldonado YA, Wang NE, Caldwell B, and the Northern California Pediatric HIV Consortium. Factors associated with early clinical recognition of children with perinatal Human Immunodeficiency Virus infection. *J Infect Dis* 1995;171:689-692.

Transgender:

21. The transgender community health project: descriptive results. San Francisco Department of Public Health 1999.

AIDS survival:

22. Katz MH, Hsu L, Lingo M, Woelffer G, Schwarcz SK. Impact of socioeconomic status on survival with AIDS. *Am J Epidemiol* 1998;148:282-291.





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# E

# Executive Summary

The face of AIDS changed dramatically in 1995, the year that protease inhibitors first became available. Protease inhibitors, used in combination with other antiretroviral agents, contributed to the first observed decline in AIDS deaths in 1995 and to the continued annual decline in AIDS deaths since then.

Coupled with declines in AIDS deaths have been decreases in the incidence of AIDS. The number of new AIDS diagnoses in San Francisco peaked in 1992 and has declined each year since then. The first decline in the incidence of AIDS is likely to be a reflection of the HIV/AIDS epidemic in San Francisco in which the peak in the number of new HIV infections is thought to have occurred in the early 1980s. However, recent declines in new AIDS diagnoses are likely to also be due to use of these highly active antiretroviral therapies (HAART) which delay the progression of HIV infection to AIDS.

Perhaps the most remarkable change in recent years has been the increase in the months of survival after AIDS diagnosis. At the beginning of the AIDS epidemic, persons who were diagnosed with AIDS died within a short time of diagnosis. By the late 1980s and early 1990s, persons diagnosed with AIDS could expect to live approximately one and a half years after their diagnosis. For persons diagnosed in recent years (1995-1998) the median survival is close to 5 years. This estimate may be low because of delays in the reporting of deaths. Thus persons with recently diagnosed AIDS may expect even greater survival than observed among persons who were diagnosed between 1995 and 1998.

Although improvements in survival have occurred among all racial, ethnic, and risk groups, not all groups have benefited to the same extent. For example, among persons diagnosed with AIDS between 1995 and 1998, survival was greater for men (median survival of 59 months) than for women (median survival 56 months), and for whites (median survival 62 months) and Latinos (median survival 65 months) than for African Americans (median survival 43 months). Survival was greater for men who have sex with men (MSM) (median survival 63 months) than for injection drug users (IDU) (median survival for MSM-IDU was 45 months and for heterosexual IDU the median survival was 37 months).

The disparity in survival may reflect differences in access to care in general and to use of HAART specifically. Uptake of HAART was rapid among persons diagnosed with AIDS in San Francisco. In 1996, 42% of persons living with AIDS had used HAART. By the end of 2000, this percent had increased to 66%. Because there is a delay in the reporting of HAART use, the true proportion of persons living with AIDS who have received HAART is likely to be greater than 66%. However, as with survival, disparities in HAART use have been observed. Among persons living with AIDS at the end of 2000, 67% of men had used HAART compared to 58% of women and 57% of transgendered persons. HAART use was less frequent among African Americans (60%) and among injection drug users. Sixty-two percent of MSM-IDU and 54% of heterosexual IDU were noted to have used HAART.

Given the established survival benefit of HAART, and the current recommendations for persons with advanced HIV disease to receive HAART, efforts to understand and overcome disparities in HAART use should be developed. San Francisco has placed a high value on providing state of the art care for persons with AIDS, including the provision of therapies to all those for whom therapy is clinically indicated, without regard to income or demographic characteristics. Effort to ensure equal access to beneficial therapies for persons with AIDS must be increased.

Although the improvement in AIDS survival associated with improved HIV/AIDS treatments is laudable, there appear to be some paradoxical effects. The fact that AIDS deaths have declined more than AIDS incidence has resulted in an increased number of persons living with AIDS in San Francisco. With improved therapy, persons with HIV/AIDS are experiencing improved functional status. This may be a contributing factor to increases in unsafe sexual behaviors and increases in new HIV infections, particularly among MSM, the group affected most severely in San Francisco. While HAART has improved conditions for HIV infected persons, it is not a cure. Efforts to prevent unnecessary illness and death through primary prevention of HIV must be vigorously pursued. In particular, our public health message must emphasize that even though HIV treatment works, it is better to stay HIV-negative.

## 1

# Overview of HIV/AIDS in San Francisco

As of December 31, 2000, a cumulative total of 27,422 AIDS cases were diagnosed in San Francisco. This comprises 23% of California AIDS cases and four percent of cases reported nationally. As of June 2000, San Francisco ranked third in the cumulative number of AIDS cases among metropolitan areas nationwide. Compared to California and the United States as a whole, AIDS cases in San Francisco are more likely to be male, white, and to occur among men who have sex with men (MSM), including MSM who also inject drugs (MSM-IDU) (Table 1.1).

**Table 1.1** Characteristics of cumulative AIDS cases in San Francisco, California, and the United States<sup>#</sup>

	San Francisco (N=27,422)		California (N = 119,900)		United States (N = 753,907)	
	Number	%		%		%
<b>Gender</b>						
Male	26,145	95%	93%		83%	
Female	1,028	4%	7%		17%	
Transgender*	249	1%	—		—	
<b>Race/Ethnicity</b>						
White	20,321	74%	60%		43%	
African American	3,298	12%	17%		38%	
Latino	2,899	11%	20%		18%	
Asian/Pacific Islander	775	3%	2%		< 1%	
Native American	129	<1%	< 1%		< 1%	
<b>Exposure Category</b>						
MSM	21,156	77%	70%		46%	
IDU	1,910	7%	10%		25%	
MSM-IDU	3,478	13%	9%		6%	
Heterosexual	372	1%	5%		10%	
Transfusion/Hemophilia	266	1%	2%		2%	
Other/Risk not reported or identified	240	1%	4%		10%	

# San Francisco data are reported through February 2001 for cases diagnosed through December 2000; California data are reported through December 2000; U.S. data are reported through June 2000.

\* The Transgender category includes 245 male-to-female and 4 female-to-male persons with AIDS. Transgender data are not reported by California and the United States. See Technical Notes "Transgender Status."

MSM account for the majority of male AIDS cases within all race/ethnic groups (Table 1.2). Among African American men, heterosexual injection drug use is the second most frequent exposure category while MSM-IDU represents the second most frequent exposure among men of all other race/ethnic groups. Less than or equal to one percent of men acquired their infection through heterosexual contact.

The most frequent exposure category among white, African American, Latino, and Native American women with AIDS is injection drug use, followed by heterosexual contact. Among Asian/Pacific Islander women, 42% acquired their infection through heterosexual contact, 31% through injection drug use, and 23% through transfusion of blood or blood products.

Table 1.2 Cumulative AIDS cases by gender, exposure category, and race/ethnicity, diagnosed through December 2000, San Francisco

	White Number (%)	African American Number (%)	Latino Number (%)	Asian/Pacific Islander Number (%)	Native American Number (%)
<b>Male</b>					
MSM	16,727 ( 84 )	1,541 ( 56 )	2,127 ( 79 )	580 ( 84 )	65 ( 57 )
IDU	477 ( 2 )	631 ( 23 )	173 ( 6 )	20 ( 3 )	9 ( 8 )
MSM-IDU	2,478 ( 12 )	501 ( 18 )	297 ( 11 )	42 ( 6 )	38 ( 33 )
Heterosexual	34 ( <1 )	29 ( 1 )	15 ( 1 )	5 ( 1 )	0 ( 0 )
Transfusion/					
Hemophilia	103 ( 1 )	18 ( 1 )	29 ( 1 )	26 ( 4 )	0 ( 0 )
Other/Unidentified	62 ( <1 )	45 ( 2 )	54 ( 2 )	16 ( 2 )	3 ( 3 )
<b>Male Subtotal</b>	<b>19,881</b>	<b>2,765</b>	<b>2,695</b>	<b>689</b>	<b>115</b>
<b>Female</b>					
IDU	195 ( 53 )	307 ( 68 )	58 ( 43 )	20 ( 31 )	11 ( 92 )
Heterosexual	108 ( 30 )	99 ( 22 )	52 ( 39 )	27 ( 42 )	1 ( 8 )
Transfusion/					
Hemophilia	45 ( 12 )	17 ( 4 )	13 ( 10 )	15 ( 23 )	0 ( 0 )
Other/Unidentified	18 ( 5 )	29 ( 6 )	11 ( 8 )	2 ( 3 )	0 ( 0 )
<b>Female Subtotal</b>	<b>366</b>	<b>452</b>	<b>134</b>	<b>64</b>	<b>12</b>
<b>Transgender</b>	<b>74</b>	<b>81</b>	<b>70</b>	<b>#</b>	<b>#</b>

# There were a total of 24 transgender persons of Asian/Pacific Islander and Native American race/ethnicity. The number of transgender Native Americans with AIDS was less than five.

In May 2000 and again in January and February of 2001, a panel of local epidemiologists, researchers, and community representatives met to review recent data on HIV prevalence, incidence and related risk behavior in San Francisco.

The panel concluded that there are currently 46,800 MSM in San Francisco, including 12,786 living with HIV (27.3% prevalence) (Table 1.3). Of 34,014 uninfected MSM, a projected 748 will acquire HIV infection this year for an incidence rate of 2.2% per year. Prevalence and incidence of HIV among 3,982 MSM-IDU was higher: 53.4% and 4.6% per year, respectively. Estimates among MSM and MSM-IDU are substantially higher than 1997 - a rise corroborated by data on risk behavior and sexually transmitted diseases.

Among non-MSM, HIV incidence has been relatively level or slightly decreasing since 1997. Among 13,850 female and male non-MSM IDU, HIV prevalence is estimated at 10.0%. An expected 48 female IDU and 45 non-MSM male IDU will seroconvert this year. HIV prevalence and incidence among heterosexuals in San Francisco remains relatively low.

For the first time, HIV prevalence and incidence data were available for transgendered females (MTF). HIV prevalence and incidence among MTF and MTF-IDU are dismally high. Among 3,000 MTF and MTF-IDU, overall HIV prevalence was estimated at 35.0% and HIV incidence at 7.3% per year.

Table 1.3 Estimates of population size, HIV prevalence, and HIV incidence, 2001 HIV Consensus Meeting, San Francisco

Population*	Estimated Size of Population at Risk (HIV- on 1/01/01)	HIV Prevalence,	
		Estimated Number Living with HIV (HIV+ on 1/01/01)	HIV Incidence, Projected Number Acquiring HIV (1/01/01 to 12/31/01)
<b>MSM</b>	34,014	12,786	748
<b>MSM-IDU</b>	1,902	2,080	87
<b>MSF-IDU</b>	8,100	900	45
<b>Female-IDU</b>	4,365	485	48
<b>MSF</b>	2,000	82	2
<b>FSM</b>	5,000	334	10
<b>MTF</b>	1,647	513	102
<b>MTF-IDU</b>	303	537	40
<b>Children</b>	22	60	2
<b>Blood products</b>	—	61	0
<b>Total</b>	—	<b>17,838</b>	<b>1,084</b>

\* Populations are based on definitions of the HIV Prevention Planning Council.

MSM: men who report having sex with men regardless of sexual identity

MSM-IDU: MSM who also report injecting drugs

MSF-IDU: men who report injecting drugs but not male-male sex

Female-IDU: women who report injecting drugs

MSF: presumptive heterosexual transmission to men who do not report male-male sex or injection drug use

FSM: presumptive heterosexual transmission to women who do not report injection drug use

MTF: male-to-female transgendered persons regardless of gender reassignment surgery or gender of their sex partners

MTF-IDU: MTF who report injection drug use, excluding hormonal injection

Children: persons exposed or infected through perinatal HIV transmission, regardless of current age

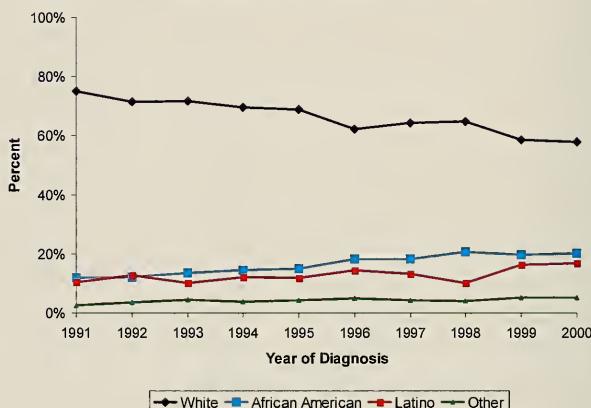
Blood products: men, women, and children infected with HIV through transfusion of blood products or occupational exposure

# Trends in AIDS Incidence

## Race/ethnicity

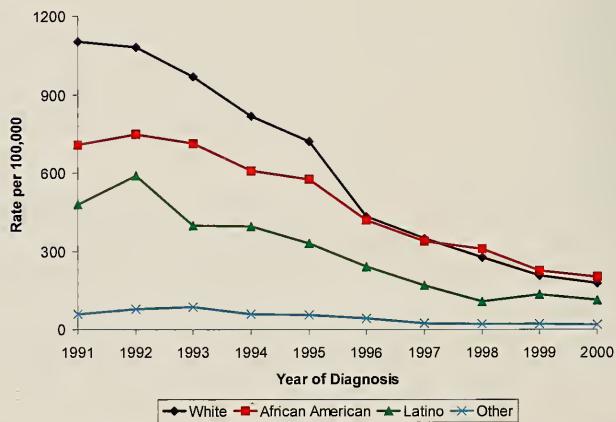
AIDS cases in San Francisco have occurred predominantly among whites. However, the proportion of AIDS cases among nonwhites, particularly African Americans, has been increasing since 1991. The distribution of AIDS cases by race/ethnicity has been relatively stable between 1999 and 2000 (Figure 2.1).

Figure 2.1 Percent of AIDS cases by race/ethnicity and year of diagnosis, San Francisco, 1991-2000



The incidence rate of AIDS among men of all race/ethnic groups peaked in 1992 and has declined through 2000 (Figure 2.2). In 1998, the incidence rate of AIDS among African American men first exceeded that of white men and that difference has persisted. In 2000, the incidence rate of AIDS per 100,000 population among African American men was 202 and 177 among white men.

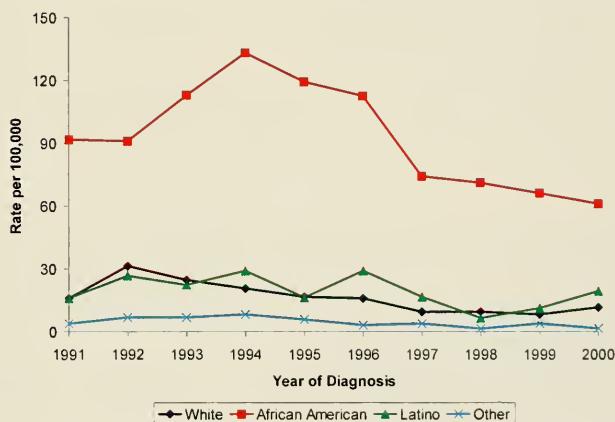
Figure 2.2 Male annual AIDS incidence rates\* per 100,000 population by race/ethnicity, San Francisco, 1991-2000



\* Excludes 245 male-to-female transgender cases. See Technical Notes "Transgender Status" and "AIDS Incidence Rate" for rate calculations.

Among women, the incidence rate of AIDS peaked in 1994 (Figure 2.3), two years later than the peak incidence among men. Compared to other women, African American women have been disproportionately affected by AIDS throughout the AIDS epidemic. In 2000, the incidence rate among African American women was 61 per 100,000; three times greater than the rate among Latino women, and six times greater than the rate among white women.

Figure 2.3 Female annual AIDS incidence rates\* per 100,000 population by race/ethnicity, San Francisco, 1991-2000

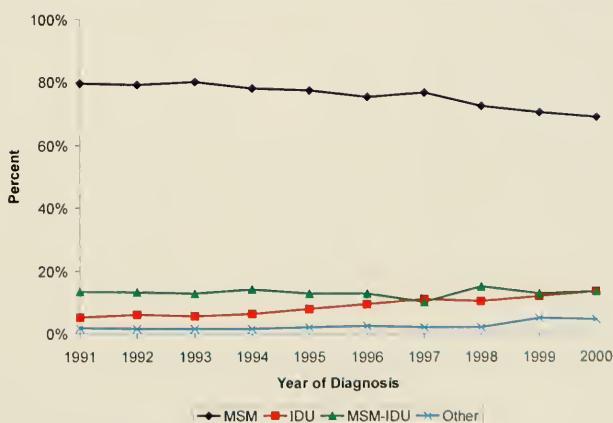


\* Excludes 4 female-to-male transgender AIDS cases. See Technical Notes "Transgender Status" and "AIDS Incidence Rates" for rate calculations.

## Exposure category

The greatest proportion of male AIDS cases has occurred among MSM (Figure 2.4). Although there has been a small decline in the proportion of male AIDS cases among MSM, the vast majority (69%) of male cases occurred among MSM in 2000, only slightly lower than the percent in 1999 (71%). MSM-IDU accounted for 13% of AIDS cases in both 1999 and 2000. The proportion of male AIDS cases among heterosexual IDU has increased from 5% in 1991 to 13% in 2000.

Figure 2.4 Percent of male AIDS cases\* by exposure category and year of diagnosis, San Francisco, 1991-2000



\* Excludes 245 male-to-female transgender cases. See Technical Notes "Transgender Status."

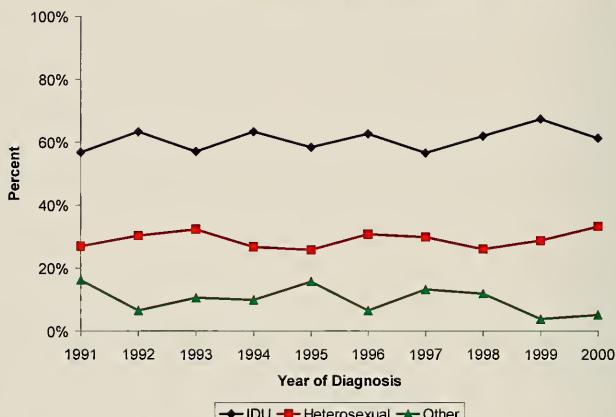
Among women with AIDS, exposure has been attributed primarily to injection drug use followed by heterosexual transmission (Figure 2.5). In 2000, 61% of female AIDS cases occurred among IDU.

## Age

The largest number of men and women with AIDS were diagnosed between ages 30 and 39 years (Table 2.1). AIDS has been diagnosed more frequently

among younger women (aged 20-29 years) than among younger men. Although the age at diagnosis has been relatively stable, there appears to be a small increase in the percent of men and women diagnosed with AIDS in the older age group (over 40 years). This likely reflects the use of effective therapies for HIV infection, which have extended the time from acquiring HIV infection to the development of AIDS.

Figure 2.5 Percent of female AIDS cases\* by exposure category and year of diagnosis, San Francisco, 1991-2000



\* Excludes 4 female-to-male transgender AIDS cases. See Technical Notes "Transgender Status."

Table 2.1 AIDS cases by gender\* and age at diagnosis, diagnosed 1991-2000, and cumulative totals through December 2000, San Francisco

	1991 - 1993 Number (%)	1994 - 1996 Number (%)	1997 - 2000 Number (%)	Cumulative Totals Number (%)
<b>Male</b>				
0 - 19	16 ( <1 )	10 ( <1 )	11 ( <1 )	63 ( <1 )
20 - 29	851 ( 12 )	460 ( 10 )	230 ( 9 )	3,035 ( 12 )
30 - 39	3,228 ( 45 )	2,065 ( 45 )	1,071 ( 43 )	12,035 ( 46 )
40 - 49	2,306 ( 32 )	1,497 ( 33 )	825 ( 33 )	8,075 ( 31 )
50+	817 ( 11 )	550 ( 12 )	342 ( 14 )	2,937 ( 11 )
<b>Male Subtotal</b>	<b>7,218 ( 100 )</b>	<b>4,582 ( 100 )</b>	<b>2,479 ( 100 )</b>	<b>26,145 ( 100 )</b>
<b>Female</b>				
0 - 19	5 ( 2 )	8 ( 3 )	8 ( 4 )	36 ( 4 )
20 - 29	53 ( 18 )	43 ( 15 )	25 ( 11 )	154 ( 15 )
30 - 39	137 ( 48 )	116 ( 40 )	78 ( 36 )	413 ( 40 )
40 - 49	60 ( 21 )	97 ( 33 )	81 ( 37 )	289 ( 28 )
50+	33 ( 11 )	28 ( 10 )	27 ( 12 )	136 ( 13 )
<b>Female Subtotal</b>	<b>288 ( 100 )</b>	<b>292 ( 100 )</b>	<b>219 ( 100 )</b>	<b>1,028 ( 100 )</b>

\* Excludes 249 transgender cases. We cannot analyze temporal trends in AIDS cases by transgender status. This information was first collected in September 1996. See Technical Notes "Transgender Status."

## 3

## Trends in AIDS Deaths

A total of 18,549 AIDS deaths have occurred in San Francisco as of December 31, 2000. The number of deaths among persons with AIDS first declined in 1995. The decline in deaths among persons with AIDS has continued through 2000. The greatest decline in deaths occurred between 1996 and 1997 in which AIDS deaths decreased by 59% (Table 3.1). Since then the decline in the number of deaths each year has been much smaller. The decrease in AIDS deaths can be attributed to the availability of highly active antiretroviral therapies in late 1995. The decline in deaths between 1996 and 2000 occurred among all demographic and risk groups.

Table 3.1 Number of AIDS deaths that occurred between 1996 and 2000, and percent change<sup>^</sup> in AIDS deaths, by gender, race/ethnicity, and risk, San Francisco

Gender	Year of Death					Cumulative Totals as of 12/31/2000
	1996	1997	1998	1999*	2000*	
Male	1,056	433 ( -59 )	419 ( -3 )	237 ( -43 )	205 ( -14 )	17,943
Female	56	25 ( -55 )	25 ( 0 )	25 ( 0 )	18 ( -28 )	497
Transgender	9	6 ( -33 )	10 ( 67 )	5 ( -50 )	6 ( 20 )	109
<b>Race/Ethnicity</b>						
White	779	310 ( -60 )	314 ( 1 )	175 ( -44 )	141 ( -19 )	14,278
African American	164	87 ( -47 )	88 ( 1 )	60 ( -32 )	56 ( -7 )	2,000
Latino	137	51 ( -63 )	37 ( -27 )	21 ( -43 )	23 ( 10 )	1,740
Other	41	16 ( -61 )	15 ( -6 )	11 ( -27 )	9 ( -18 )	531
<b>Risk</b>						
MSM	818	305 ( -63 )	286 ( -6 )	154 ( -46 )	134 ( -13 )	14,620
IDU	115	65 ( -43 )	73 ( 12 )	50 ( -32 )	40 ( -20 )	1,024
MSM-IDU	157	77 ( -51 )	79 ( 3 )	56 ( -29 )	43 ( -23 )	2,409
Heterosexual	13	10 ( -23 )	5 ( -50 )	3 ( -40 )	4 ( 33 )	163
Other/Unidentified	18	7 ( -61 )	11 ( 57 )	4 ( -64 )	8 ( 100 )	333
<b>Total</b>	<b>1,121</b>	<b>464 ( -59 )</b>	<b>454 ( -2 )</b>	<b>267 ( -41 )</b>	<b>229 ( -14 )</b>	<b>18,549</b>

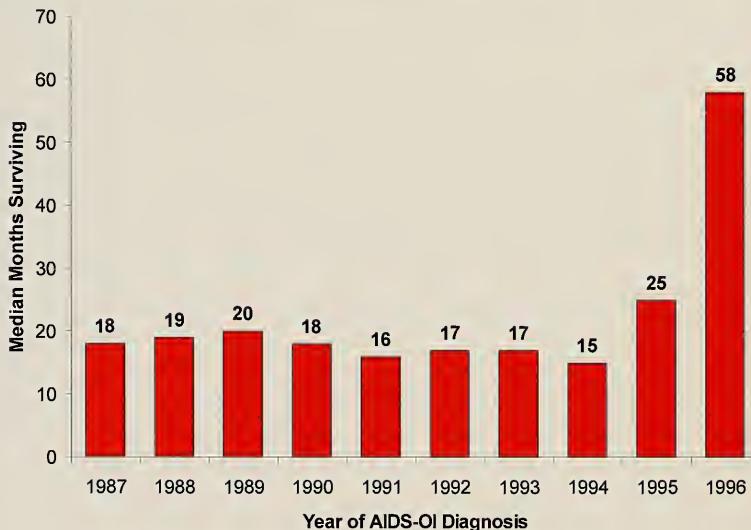
<sup>^</sup> Percent change was calculated using the number of deaths which occurred in a given year minus the number of deaths that occurred in the previous year, divided by the number of deaths which occurred in the previous year; a positive percent indicates an increase and a negative percent indicates a decrease in the number of deaths from the previous year.

\* Data are incomplete due to reporting delay. In addition, deaths that occurred outside of San Francisco are primarily identified through the match with the National Death Index (NDI) which is complete only through 1998.

# AIDS Survival

The median months of survival after an AIDS opportunistic illness (OI) diagnosis ranged from 18 to 20 months between 1987 and 1990 (Figure 4.1). The median months of survival was lower (range 15-17 months) between 1991 and 1994. Survival increased for persons diagnosed with an OI in 1995 and 1996 to 25 months and 58 months respectively. The decrease in survival for persons diagnosed in the early 1990s is probably a reflection of the use of prophylaxis against *Pneumocystis carinii* pneumonia which resulted in persons reaching an AIDS diagnosis later in the course of their disease, thereby reducing survival after AIDS. The more recent improvements in survival are due to the dramatic effect of highly active antiretroviral therapies that became widely available towards the end of 1995.

Figure 4.1 Trends in median months of survival\* after AIDS opportunistic illness diagnosis, San Francisco, 1987-1996



\* See Technical Notes "AIDS Survival."

The increases in survival have occurred among all demographic and risk groups (Table 4.1). The median survival has been somewhat greater among men than women, Latinos than other race/ethnic groups, and non-injection drug users. The difference in survival between men and women and race and ethnic groups may reflect variations in use of highly active antiretroviral therapies. The worse survival among injection drug users may reflect less use of antiretroviral therapy as well as increased mortality from other causes such as drug overdose.

Table 4.1 Trends in median months of survival<sup>^</sup> after AIDS opportunistic illness diagnosis by gender, race/ethnicity, and risk, San Francisco, 1987-1998

	1987 - 1989 (N = 5,042) <u>Median Months</u>	1990 - 1994 (N = 8,359) <u>Median Months</u>	1995 - 1998 (N = 3,045) <u>Median Months</u>
<b>Total</b>	<b>19</b>	<b>17</b>	<b>59</b>
<b>Gender*</b>			
Male	19	17	59
Female	16	18	56
<b>Race/Ethnicity</b>			
White	19	17	62
African American	15	16	43
Latino	18	17	65
Other	18	19	53
<b>Risk</b>			
MSM	19	17	63
IDU	15	16	37
MSM-IDU	17	16	45
Other	15	18	56

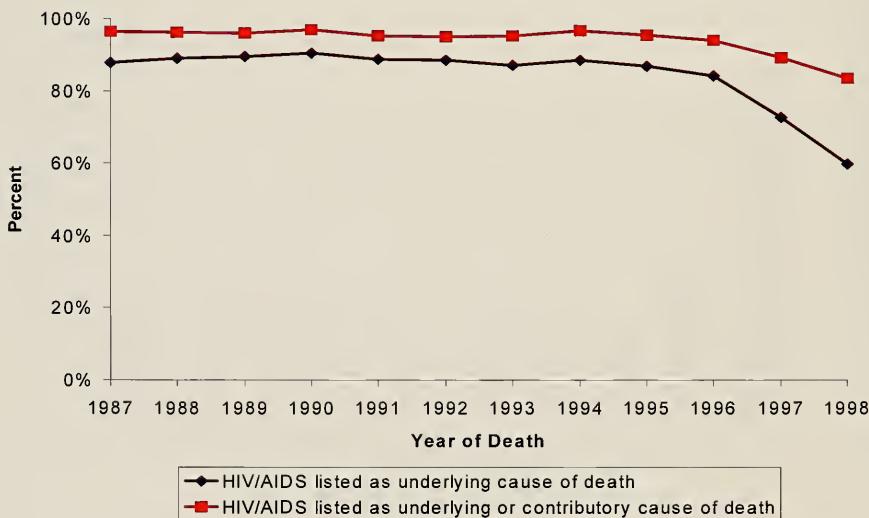
<sup>^</sup> See Technical Notes "AIDS Survival."

\* We cannot analyze temporal trends in AIDS survival by transgender status. This information was first collected in September 1996. See Technical Notes "Transgender Status."

# Causes of Death among Persons with AIDS

HIV/AIDS was listed as an underlying or contributory cause of death for 83% of deaths occurring in 1998 among persons diagnosed with AIDS in San Francisco. The percent of deaths that included HIV/AIDS as an underlying or contributory cause was stable between 1987 and 1995 (Figure 5.1). However, the percent of persons with AIDS in whom HIV/AIDS was listed as an underlying or contributory cause of death declined each year between 1996 and 1998, suggesting that deaths due to causes other than HIV/AIDS (e.g. drug overdose, suicide) increased among persons with AIDS in recent years. Similar trends were observed in the percent of deaths in which HIV/AIDS was listed as the underlying cause of death. For the years 1987 through 1995, HIV/AIDS was listed as the underlying cause of death in 87%-90% of deaths among persons reported with AIDS. This percent declined to 84% in 1996, to 73% in 1997, and to 60% in 1998.

Figure 5.1 Percent of HIV/AIDS\* listed as cause of death on death certificate among persons reported with AIDS by year of death, San Francisco, 1987-1998



\* Includes AIDS-defining conditions. See Technical Notes "Causes of Death."

Excluding HIV/AIDS, the most frequently cited underlying causes of death in 1995 and 1998 among persons with AIDS were other infectious diseases (4.6%) [notably viral hepatitis (2.0%) and aspergillosis (1.4%)], injuries and poisonings (3.4%) [including drug overdose (1.5%) and suicide (1.0%)], and non-AIDS cancers (2.8%) (Table 5.1). The percent of persons with AIDS who died of these conditions between 1995 and 1998 increased compared to earlier time periods. The percent that died of heart diseases and other cardiovascular or respiratory diseases also increased from one percent prior to 1995 to two percent for persons who died between 1995 and 1998. The increase in the percent of deaths among persons with AIDS that are not attributed to HIV/AIDS may be due to the extended survival in which the additional time alive allows for the development of causes of death unrelated to HIV/AIDS.

Table 5.1 Underlying causes of death\* among persons with AIDS, San Francisco, 1987-1998

Underlying Cause of Death	Year of Death		
	1987-1990 Number (%)	1991-1994 Number (%)	1995-1998 Number (%)
HIV/AIDS	3,932 ( 86.1 )	5,497 ( 86.4 )	2,869 ( 78.3 )
AIDS defining conditions	148 ( 3.2 )	116 ( 1.8 )	99 ( 2.7 )
Infections not included in AIDS definition	52 ( 1.1 )	153 ( 2.4 )	167 ( 4.6 )
<i>Viral hepatitis</i>	16 ( 0.4 )	49 ( 0.8 )	75 ( 2.0 )
<i>Aspergillosis</i>	4 ( 0.1 )	45 ( 0.7 )	52 ( 1.4 )
<i>Other</i>	32 ( 0.7 )	59 ( 0.9 )	40 ( 1.1 )
Injury and poisoning	73 ( 1.6 )	131 ( 2.1 )	123 ( 3.4 )
<i>Drug overdose</i>	10 ( 0.2 )	38 ( 0.6 )	55 ( 1.5 )
<i>Suicide</i>	38 ( 0.8 )	65 ( 1.0 )	38 ( 1.0 )
<i>Other</i>	25 ( 0.5 )	28 ( 0.4 )	30 ( 0.8 )
Cancers not included in AIDS definition	64 ( 1.4 )	93 ( 1.5 )	103 ( 2.8 )
<i>Lung/bronchial cancer</i>	28 ( 0.6 )	30 ( 0.5 )	24 ( 0.7 )
<i>Hodgkin's disease</i>	5 ( 0.1 )	5 ( 0.1 )	10 ( 0.3 )
<i>Other</i>	31 ( 0.7 )	58 ( 0.9 )	69 ( 1.9 )
Heart disease	41 ( 0.9 )	49 ( 0.8 )	67 ( 1.8 )
Pneumonia	53 ( 1.2 )	53 ( 0.8 )	47 ( 1.3 )
Liver disease	28 ( 0.6 )	74 ( 1.2 )	32 ( 0.9 )
Unknown or unspecified cause	3 ( 0.1 )	2 ( 0.0 )	22 ( 0.6 )
Other respiratory system diseases	19 ( 0.4 )	23 ( 0.4 )	27 ( 0.7 )
Other cardiovascular diseases	15 ( 0.3 )	24 ( 0.4 )	20 ( 0.5 )
Other digestive system diseases	20 ( 0.4 )	27 ( 0.4 )	24 ( 0.7 )
Other immune deficiencies	67 ( 1.5 )	54 ( 0.8 )	18 ( 0.5 )
Other causes	52 ( 1.1 )	64 ( 1.0 )	47 ( 1.3 )
<b>Total</b>	<b>4,567</b>	<b>6,360</b>	<b>3,665</b>

\* See Technical Notes "Causes of Death."

# Persons Living with AIDS

Although the annual number of new AIDS cases has decreased since 1992, the ongoing incidence of AIDS, coupled with the increase in survival after AIDS has resulted in an increasing number of persons living with AIDS in San Francisco. As of December 31, 2000, there were 8,873 persons living with AIDS in San Francisco. The demographic and risk group characteristics of persons living with AIDS have remained relatively stable between 1997 and 2000; the majority is male, white, aged 40-49 years, and MSM (including MSM-IDU) (Table 6.1). The percent of persons living with AIDS who are 40 years or older has increased over time, suggesting the use of treatments for HIV infection has delayed the age at AIDS diagnosis and prolonged the survival of AIDS.

**Table 6.1 Persons living with AIDS by demographic and risk characteristics, San Francisco, 1997-2000<sup>#</sup>**

	1997 Number (%)	1998 Number (%)	1999 Number (%)	2000 Number (%)
<b>Gender</b>				
Male	7,412 ( 93 )	7,653 ( 93 )	7,949 ( 93 )	8,202 ( 92 )
Female	440 ( 6 )	465 ( 6 )	492 ( 6 )	531 ( 6 )
Transgender	123 ( 2 )	125 ( 2 )	136 ( 2 )	140 ( 2 )
<b>Race/Ethnicity</b>				
White	5,548 ( 70 )	5,703 ( 69 )	5,880 ( 69 )	6,043 ( 68 )
African American	1,128 ( 14 )	1,190 ( 14 )	1,248 ( 15 )	1,298 ( 15 )
Latino	980 ( 12 )	1,016 ( 12 )	1,094 ( 13 )	1,159 ( 13 )
Asian/Pacific Islander	274 ( 3 )	290 ( 4 )	306 ( 4 )	323 ( 4 )
Native American	45 ( 1 )	44 ( 1 )	49 ( 1 )	50 ( 1 )
<b>Age (at end of each year)</b>				
0 - 19	24 ( <1 )	27 ( <1 )	29 ( <1 )	31 ( <1 )
20 - 29	375 ( 5 )	317 ( 4 )	266 ( 3 )	220 ( 2 )
30 - 39	2,915 ( 37 )	2,833 ( 34 )	2,730 ( 32 )	2,617 ( 29 )
40 - 49	3,217 ( 40 )	3,403 ( 41 )	3,634 ( 42 )	3,782 ( 43 )
50+	1,444 ( 18 )	1,663 ( 20 )	1,918 ( 22 )	2,223 ( 25 )
<b>Exposure Category</b>				
<b>Male</b>				
MSM	5,918 ( 79 )	6,117 ( 79 )	6,350 ( 79 )	6,536 ( 78 )
IDU	488 ( 6 )	501 ( 6 )	535 ( 7 )	571 ( 7 )
MSM-IDU	1,004 ( 13 )	1,030 ( 13 )	1,047 ( 13 )	1,069 ( 13 )
Heterosexual	27 ( <1 )	28 ( <1 )	36 ( <1 )	42 ( 1 )
Other/Unidentified	95 ( 1 )	99 ( 1 )	114 ( 1 )	121 ( 1 )
Subtotal	7,532	7,775	8,082	8,339
<b>Female</b>				
IDU	266 ( 60 )	279 ( 60 )	293 ( 59 )	315 ( 59 )
Heterosexual	131 ( 30 )	140 ( 30 )	152 ( 31 )	167 ( 31 )
Other/Unidentified	46 ( 10 )	49 ( 10 )	50 ( 10 )	52 ( 10 )
Subtotal	443	468	495	534
<b>Total</b>	<b>7,975</b>	<b>8,243</b>	<b>8,577</b>	<b>8,873</b>

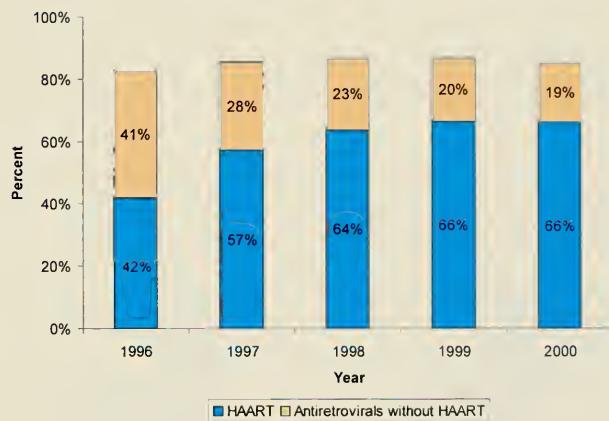
# Persons living with AIDS at the end of each year.

## 7

# HAART among Persons Living with AIDS

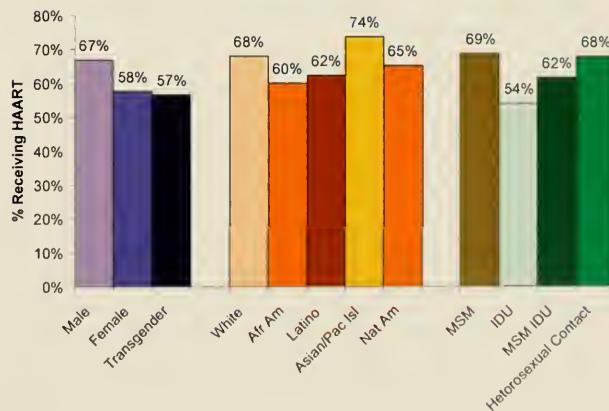
The majority of persons with AIDS in San Francisco have received antiretroviral therapy and the proportion of persons with AIDS on therapy has been increasing since 1996. Between 1996 and 2000, the use of highly active antiretroviral therapy (HAART) increased substantially (Figure 7.1). By the end of 2000, 85% of persons living with AIDS had received some type of antiretroviral therapy and 66% were noted to have received HAART. A greater percent of men were noted to have used HAART than were women or transgendered persons (Figure 7.2). HAART use was noted among 74% of Asians/Pacific Islanders with AIDS and among 68% of whites with AIDS. Use of HAART was noted by a smaller percent of African Americans, Latinos, and Native Americans with AIDS. HAART use was more common among MSM and heterosexuals with AIDS than among heterosexual and homosexual injection drug users.

Figure 7.1 Use of HIV antiretrovirals\* and HAART among persons living with AIDS by year, San Francisco, 1996-2000



\* See Technical Notes "Treatments."

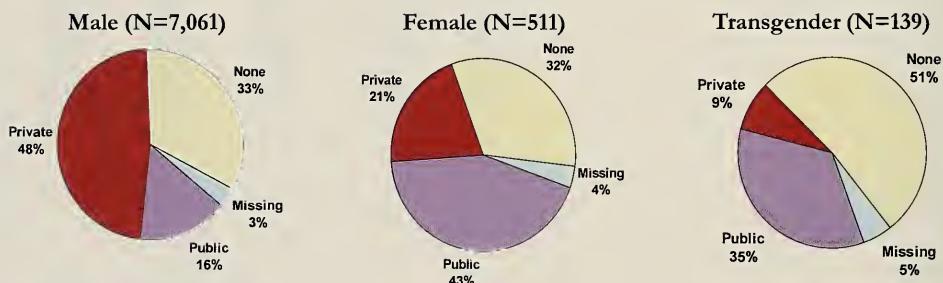
Figure 7.2 Use of HAART among persons living with AIDS by gender, race/ethnicity, and risk, San Francisco, December 2000



# Insurance Status at AIDS Diagnosis

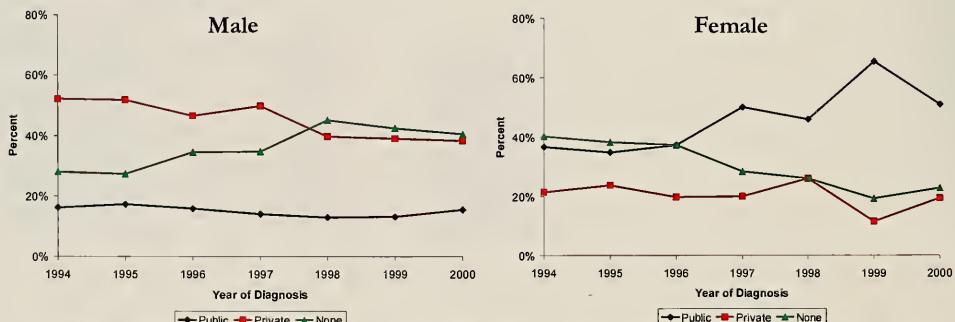
Insurance status at the time of AIDS diagnosis differs by gender. Although one third of both men and women who were diagnosed with AIDS between 1994 and 2000 were uninsured at the time of diagnosis, only 21% of women had private insurance while 48% of men had private insurance at the time of AIDS diagnosis (Figure 8.1). More than half of transgendered persons with AIDS did not have health insurance at the time of diagnosis. Between 1994 and 2000, the proportion of men with AIDS without health insurance increased while the proportion of women without health insurance decreased (Figure 8.2).

Figure 8.1 AIDS cases by gender and insurance status<sup>#</sup> at diagnosis, San Francisco, 1994-2000



# Collection of insurance information started in 1994.

Figure 8.2 Male and female AIDS cases\* by insurance status and year of diagnosis, San Francisco, 1994-2000



\* Excludes transgender cases. We are unable to look at insurance status by year of diagnosis among transgender cases. This information was first collected in September 1996.

# AIDS Opportunistic Illnesses

Initial and subsequent AIDS opportunistic illnesses (OIs) among persons with AIDS are collected through retrospective and prospective medical chart review. The number of AIDS OIs diagnosed each year has declined substantially between 1996 and 2000 (Table 9.1). There was a notable decrease in the proportion of cytomegalovirus infection (CMV), CMV retinitis and *Mycobacterium avium* complex (MAC) diagnoses. The decrease in CMV is most likely due to immune reconstitution with protease inhibitors while the decrease in MAC is the result of both immune reconstitution and wider use of MAC prophylaxis. Despite their lower numbers, *Pneumocystis carinii* pneumonia, wasting syndrome and Kaposi's sarcoma remain the most frequently diagnosed OI in this time period.

Table 9.1 Number of AIDS opportunistic illnesses\* diagnosed between 1996 and 2000, San Francisco

AIDS Indicator Condition	1996	1997	1998	1999	2000
	Number (%)	Number (%)	Number (%)	Number (%)	Number (%)
Candidiasis, bronchi, trachea, or lungs	8 ( 0.3 )	2 ( 0.2 )	3 ( 0.4 )	7 ( 1.1 )	1 ( 0.2 )
Candidiasis, esophageal	167 ( 7.1 )	80 ( 7.2 )	59 ( 7.0 )	50 ( 7.7 )	41 ( 8.9 )
Cervical cancer	1 ( 0.0 )	1 ( 0.1 )	0 ( 0.0 )	1 ( 0.2 )	0 ( 0.0 )
Coccidioidomycosis, disseminated or extrapulmonary	4 ( 0.2 )	1 ( 0.1 )	2 ( 0.2 )	2 ( 0.3 )	1 ( 0.2 )
Cryptococcosis, extrapulmonary	89 ( 3.8 )	58 ( 5.2 )	41 ( 4.9 )	33 ( 5.1 )	24 ( 5.2 )
Cryptosporidiosis, chronic intestinal	70 ( 3.0 )	39 ( 3.5 )	34 ( 4.0 )	32 ( 4.9 )	14 ( 3.0 )
Cytomegalovirus disease (CMV)	132 ( 5.6 )	67 ( 6.0 )	25 ( 3.0 )	26 ( 4.0 )	13 ( 2.8 )
Cytomegalovirus retinitis	160 ( 6.8 )	39 ( 3.5 )	43 ( 5.1 )	28 ( 4.3 )	11 ( 2.4 )
HIV encephalopathy	126 ( 5.3 )	60 ( 5.4 )	63 ( 7.5 )	46 ( 7.1 )	30 ( 6.5 )
Herpes simplex	25 ( 1.1 )	10 ( 0.9 )	10 ( 1.2 )	4 ( 0.6 )	3 ( 0.7 )
Histoplasmosis, disseminated or extrapulmonary	12 ( 0.5 )	4 ( 0.4 )	2 ( 0.2 )	1 ( 0.2 )	2 ( 0.4 )
Isosporiasis, chronic intestinal	3 ( 0.1 )	2 ( 0.2 )	1 ( 0.1 )	2 ( 0.3 )	1 ( 0.2 )
Kaposi's sarcoma	265 ( 11.2 )	125 ( 11.2 )	66 ( 7.9 )	54 ( 8.3 )	49 ( 10.6 )
Lymphoma, Burkitt's	24 ( 1.0 )	14 ( 1.3 )	15 ( 1.8 )	6 ( 0.9 )	8 ( 1.7 )
Lymphoma, immunoblastic	72 ( 3.1 )	50 ( 4.5 )	22 ( 2.6 )	19 ( 2.9 )	22 ( 4.8 )
Lymphoma, primary in brain	37 ( 1.6 )	14 ( 1.3 )	5 ( 0.6 )	4 ( 0.6 )	3 ( 0.7 )
<i>Mycobacterium avium</i> complex (MAC)	236 ( 10.0 )	79 ( 7.1 )	54 ( 6.4 )	45 ( 6.9 )	31 ( 6.7 )
<i>Mycobacterium tuberculosis</i> , disseminated or extrapulmonary	25 ( 1.1 )	6 ( 0.5 )	7 ( 0.8 )	5 ( 0.8 )	4 ( 0.9 )
<i>Mycobacterium tuberculosis</i> , pulmonary	38 ( 1.6 )	13 ( 1.2 )	28 ( 3.3 )	27 ( 4.2 )	8 ( 1.7 )
<i>Mycobacterium</i> , other species	21 ( 0.9 )	5 ( 0.4 )	1 ( 0.1 )	6 ( 0.9 )	4 ( 0.9 )
<i>Pneumocystis carinii</i> pneumonia (PCP)	361 ( 15.3 )	202 ( 18.1 )	175 ( 20.8 )	127 ( 19.6 )	115 ( 24.9 )
Pneumonia, recurrent	97 ( 4.1 )	74 ( 6.6 )	47 ( 5.6 )	37 ( 5.7 )	17 ( 3.7 )
Progressive multifocal leukoencephalopathy	28 ( 1.2 )	8 ( 0.7 )	7 ( 0.8 )	5 ( 0.8 )	3 ( 0.7 )
Salmonella sepsis, recurrent	3 ( 0.1 )	1 ( 0.1 )	0 ( 0.0 )	0 ( 0.0 )	0 ( 0.0 )
Toxoplasmosis of brain	38 ( 1.6 )	16 ( 1.4 )	10 ( 1.2 )	7 ( 1.1 )	2 ( 0.4 )
Wasting syndrome	318 ( 13.5 )	146 ( 13.1 )	120 ( 14.3 )	75 ( 11.6 )	54 ( 11.7 )
<b>Total</b>	<b>2,360 ( 100 )</b>	<b>1,116 ( 100 )</b>	<b>840 ( 100 )</b>	<b>649 ( 100 )</b>	<b>461 ( 100 )</b>

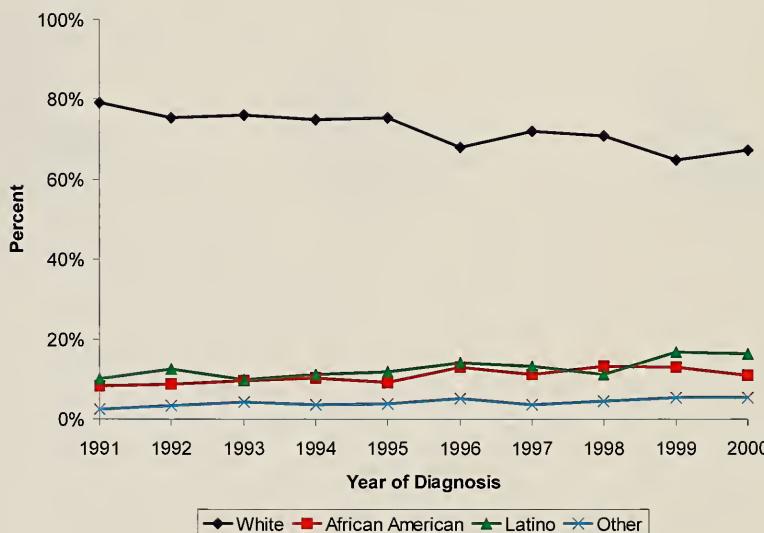
\* A person may have more than one opportunistic illness diagnosed during the same or different year. Data are provisional for opportunistic illnesses diagnosed in recent years.

# HIV/AIDS among Men Who Have Sex with Men

## AIDS surveillance data

Seventy percent of San Francisco AIDS cases have occurred among white MSM. Between 1991 and 2000, the proportion of AIDS cases among MSM who are white has declined slightly while the proportion of non-white MSM AIDS cases has increased (Figure 10.1).

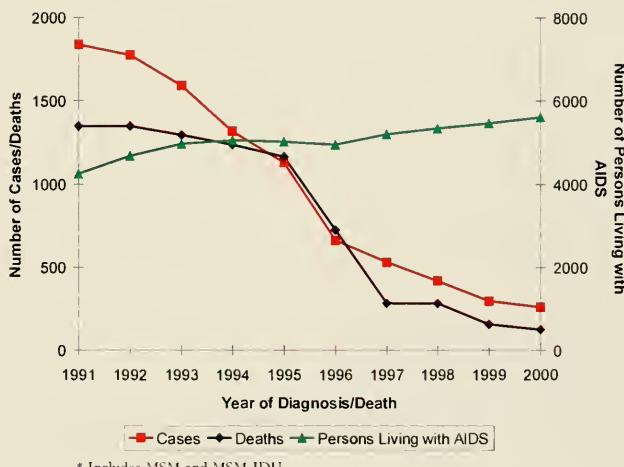
Figure 10.1 Percent of AIDS cases among MSM\* by race/ethnicity and year of diagnosis, San Francisco, 1991-2000



\* Includes MSM and MSM-IDU.

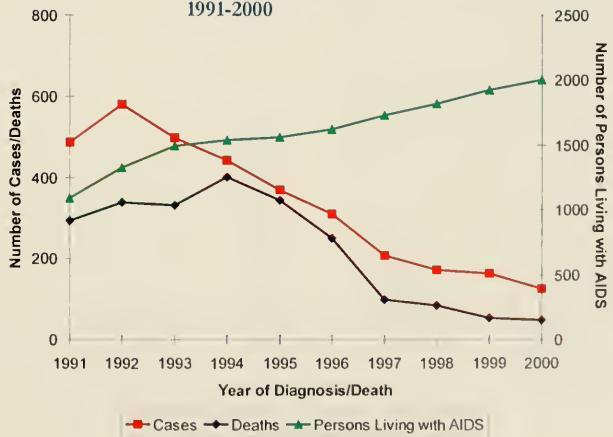
The number of new AIDS cases among white MSM peaked in 1991 and declined each year thereafter (Figure 10.2). The number of new AIDS cases among nonwhite MSM peaked in 1992 and declined steadily thereafter (Figure 10.3). The number of deaths peaked among white MSM with AIDS in 1991 and among nonwhite MSM in 1994. Deaths in both of these groups have declined substantially since 1995. The number of white MSM living with AIDS increased by 32% between 1991 and 2000 while the number of nonwhite MSM living with AIDS increased by 84% in this same time period. As of December 31, 2000, there were 5,605 white MSM and 2,002 nonwhite MSM living with AIDS in San Francisco.

Figure 10.2 AIDS cases, deaths, and prevalence among white MSM\* by year, San Francisco, 1991-2000



\* Includes MSM and MSM-IDU.

Figure 10.3 AIDS cases, deaths, and prevalence among nonwhite MSM\* by year, San Francisco, 1991-2000



\* Includes MSM and MSM-IDU.

## HIV seroprevalence and seroincidence data

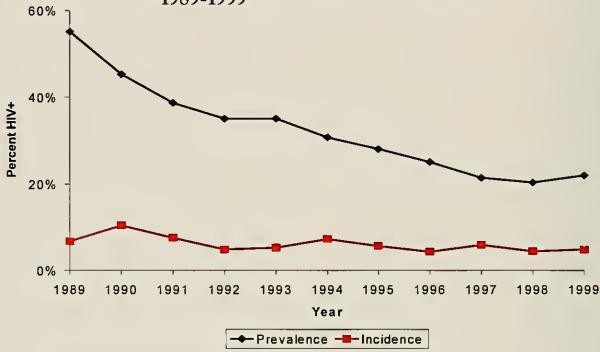
### STD Clinic Survey

HIV prevalence data are available from annual blinded seroprevalence surveys that were conducted at the San Francisco municipal sexually transmitted disease clinic between 1989 and 1999. Application of the Sero-logic Testing Algorithm for Recent HIV Seroconversion (STARHS) to serum stored from these surveys provided information on HIV seroincidence in this population (Schwarz et al, in press).

Between 1989 and 1999, the prevalence of HIV infection among MSM at the STD Clinic decreased from 55% in 1989 to 22% in 1999 (Figure 10.4). The incidence of infection among MSM during this time period fluctuated from a high of 10.4% per year in 1990 to a low of 4.3% per year in 1996. Between 1998 and 1999, the incidence among MSM increased slightly from 4.5% to 4.8%. The decline in prevalence is most likely due to HIV infected persons seeking

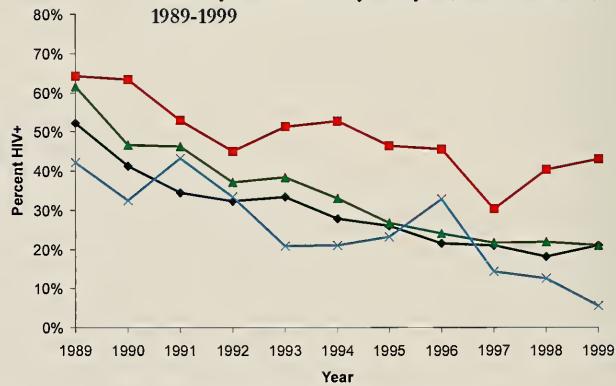
care outside of the STD clinic in more recent years. The high rate of new HIV infections among MSM at the STD clinic is likely due to the higher level of risk among MSM who seek care at this clinic as well as to high levels of ongoing HIV transmission among MSM in San Francisco in recent years. HIV prevalence remained the highest among African Americans throughout the survey period (Figure 10.5).

Figure 10.4 HIV prevalence and incidence among MSM\* attending an STD clinic by year, San Francisco, 1989-1999



\*Includes MSM and MSM-IDU.

Figure 10.5 HIV prevalence among MSM\* attending an STD clinic by race/ethnicity and year, San Francisco, 1989-1999



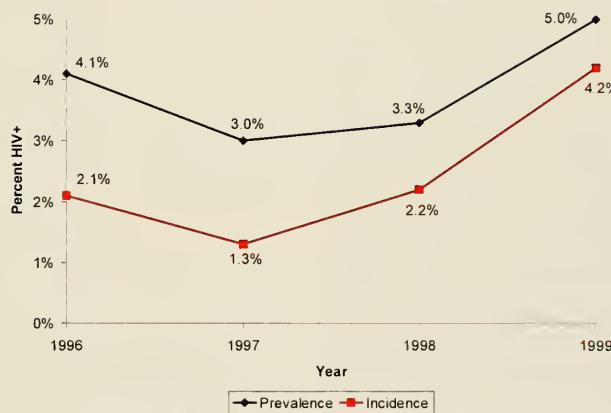
\*Includes MSM and MSM-IDU.

### Anonymous Counseling and Testing data

Data from the anonymous test sites (ATS) are from persons seeking voluntary HIV counseling and testing and in general these persons tend to have lower levels of risk behavior than MSM patients attending the STD clinic. In 1996 and 1997, the prevalence of HIV infection among MSM was approximately twice the incidence rate (Figure 10.6). Both of these rates declined from 1996 to 1997. However, the incidence and prevalence of HIV increased from 1997 to 1998 and again in 1999. This last year the incidence of HIV among MSM was 4.2% per year and the prevalence was 5.0%.

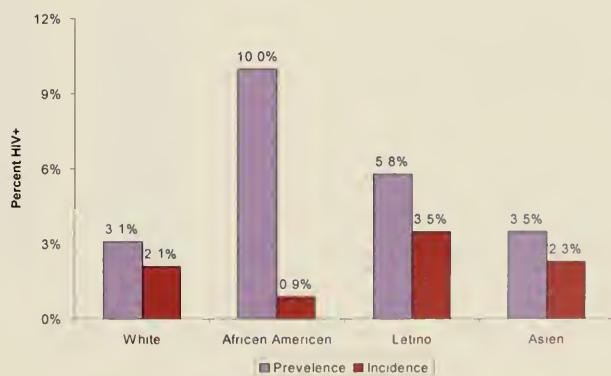
African American MSM at the ATS had the highest prevalence of HIV (10.0%) but the lowest incidence of HIV (0.9% per year) (Figure 10.7). This may be due to African Americans testing later in the course of their infection. Incidence of HIV was highest among Latino MSM (3.5% per year), while prevalence was 5.8%. Prevalence and incidence rates at ATS may not be generalizable to the general population of MSM as they are based on persons who access testing at ATS, and do not reflect those who test elsewhere or who have never been tested for HIV.

Figure 10.6 HIV prevalence and incidence among MSM\* at anonymous testing sites by year, San Francisco, 1996-1999



\*Includes MSM and MSM-IDU.

Figure 10.7 HIV prevalence and incidence among MSM\* at anonymous testing sites by race/ethnicity, San Francisco, 1996-1999



\*Includes MSM and MSM-IDU.

**San Francisco General Hospital Counseling and Testing data - Record Based Incidence Studies (RBIS)**

Data are available from persons who received voluntary HIV counseling and testing at San Francisco General Hospital (SFGH) more than once between 1994 and 1998. HIV seroconversions were identified through a record based review of persons who were HIV uninfected at their first SFGH test and whose subsequent test was positive (see Technical Notes “Record based incidence studies”).

The incidence of HIV infection among MSM patients tested at SFGH fluctuated between 1994 and 1998 (Figure 10.8). There were two peaks during these years, one in 1995 at a rate of 4.1 per 100 person years and the other in 1998 at 4.3 per 100 person years. It is worth noting that HIV incidence increased each year between 1996 and 1998.

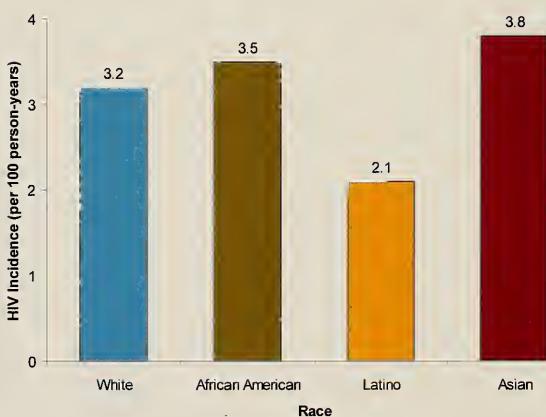
The incidence of HIV among SFGH MSM patients between 1994 and 1998 was similar for all racial groups, with somewhat lower incidence among Latino MSM (Figure 10.9).

**Figure 10.8** HIV incidence among MSM\* testing at San Francisco General Hospital by year, 1994-1998



\*Includes MSM and MSM-IDU.

**Figure 10.9** HIV incidence among MSM testing at San Francisco General Hospital by race/ethnicity, 1994-1998



\*Includes MSM and MSM-IDU.

## Sexual risk behavior data

The STOP AIDS Project has collected data from annual interviews with MSM in San Francisco. The percent of MSM who reported having multiple sex partners and unprotected anal intercourse increased from 23% in 1994 to 47% in 2000 (Figure 10.10). During this same time period the percent of MSM who reported using condoms all of the time decreased from 70% in 1994 to 50% in 2000 (Figure 10.11).

Figure 10.10 Percent of MSM reporting multiple partners and unprotected anal intercourse, STOP AIDS Project, 1994-2000



Figure 10.11 Percent of MSM reporting 100% condom use, STOP AIDS Project, 1994-2000



# HIV/AIDS among Injection Drug Users

## AIDS surveillance data

Injection drug use by non-MSMs comprises the third most frequent exposure group for persons with AIDS in San Francisco, after MSM and MSM-IDU. The number of new AIDS cases among non-MSM IDU peaked in 1992 with 212 cases diagnosed that year (Figure 11.1). The number of deaths in this group plateaued between 1993 and 1996 and declined substantially in 1997. The number of non-MSM IDU living with AIDS has increased steadily and as of December 31, 2000 there were 864 non-MSM injection drug users living with AIDS in San Francisco.

African Americans account for the greatest number of non-MSM IDU AIDS cases (Figure 11.2). The number of new AIDS cases among African American non-MSM IDU plateaued between 1992 and 1995 and has declined since. However, among white non-MSM IDU AIDS cases, the number of new cases peaked sharply in 1992 and has declined since.

Figure 11.1 AIDS cases, deaths, and prevalence among heterosexual IDU by year, San Francisco, 1991-2000

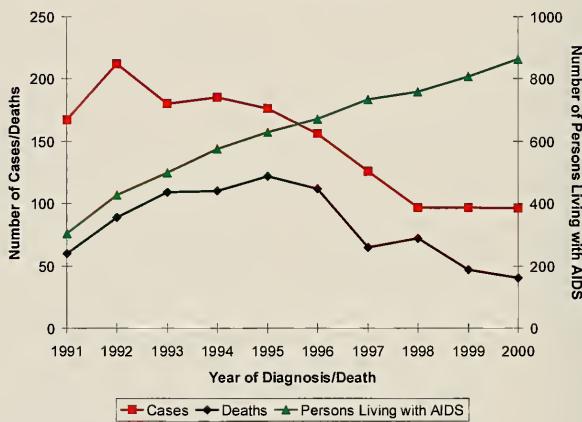
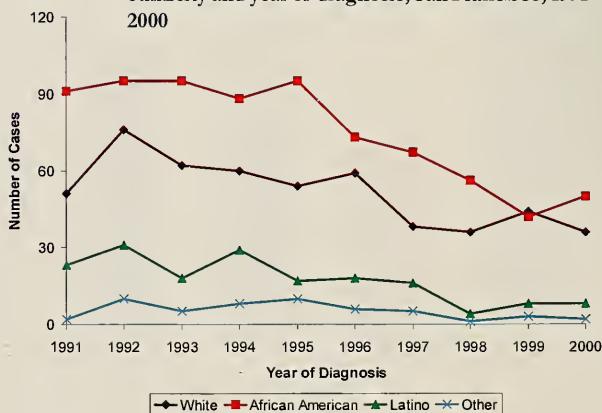


Figure 11.2 AIDS cases among heterosexual IDU by race/ethnicity and year of diagnosis, San Francisco, 1991-2000



MSM-IDU account for the majority (62%) of IDU-associated AIDS cases followed by male heterosexual IDU who comprise 24% of IDU-associated AIDS cases (Table 11.1). Of the MSM IDU cases, 72% are white and 16% African American. This differs markedly from the heterosexual male and female IDU AIDS cases in which 48% and 53% respectively, are African American.

## HIV seroprevalence and seroincidence data

### STD Clinic Survey

HIV prevalence data are available from annual blinded seroprevalence surveys that were conducted at the San Francisco municipal sexually transmitted disease clinic between 1989 and 1999. Application of the Sero-logic Testing Algorithm for Recent HIV Seroconversion (STARHS) to serum stored from these surveys provided information on HIV seroincidence in this population (Schwarz, et al., in press). The prevalence of HIV infection among non-MSM IDU STD clinic patients declined from 11% in 1989 to 2% in 1999 (Figure 11.3). The incidence during this time period fluctuated (range 0-4.3% per year) but did not demonstrate an overall significant trend.

Table 11.1 Injection drug use-associated AIDS cases by exposure category and race/ethnicity, diagnosed through December 2000, San Francisco

Exposure Category	Number	Race/Ethnicity Distribution by Percent				
		White	African American	Latino	Asian	Native American
Male heterosexual IDU	1,316	36%	48%	13%	2%	1%
Female heterosexual IDU	554	32%	53%	10%	3%	2%
MSM IDU	3,478	72%	16%	9%	1%	1%
Lesbian IDU	40	50%	30%	13%	5%	3%
Heterosexual contact with IDU	156	36%	45%	13%	6%	0%
Children whose mothers are IDUs or sex partners of IDUs	30	17%	53%	17%	10%	3%

Figure 11.3 HIV prevalence and incidence among heterosexual IDU attending an STD clinic by year, San Francisco, 1989-1999

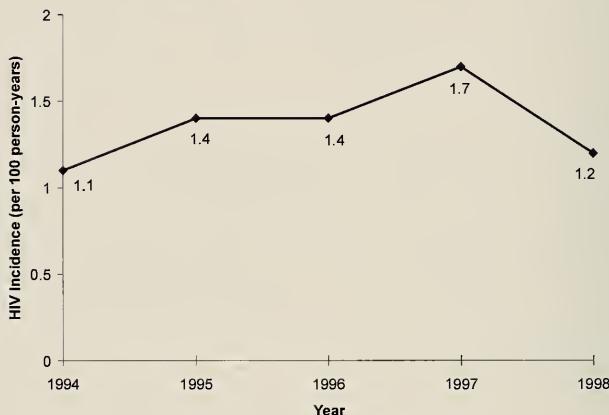


**San Francisco General Hospital Counseling and Testing data - Record Based Incidence Studies (RBIS)**

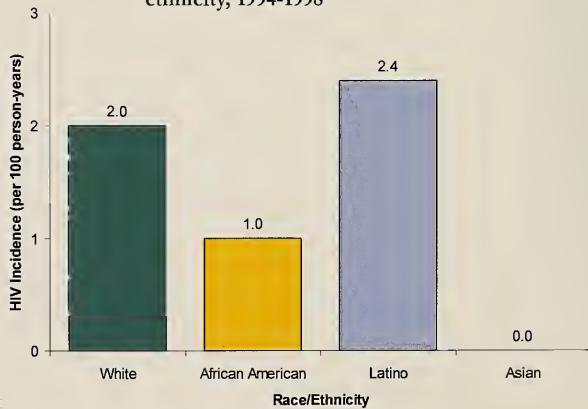
Data are available from persons who received voluntary HIV counseling and testing at San Francisco General Hospital (SFGH) more than once between 1994 and 1998. HIV seroconversions were identified through a record based review of persons who were HIV uninfected at their first SFGH test and whose subsequent test was positive (see Technical Notes "Record based incidence studies"). The incidence of HIV infection among non-MSM IDU at San Francisco General Hospital fluctuated (range 1.1 to 1.7 per 100 person years) but did not demonstrate a significant overall upward or downward trend between 1994 and 1998 (Figure 11.4).

Among non-MSM IDU the incidence was highest among Latinos (2.4 per 100 person years) followed by whites (2.0 per 100 person years) and lowest among Asians in whom there were no seroconversions during the study period (Figure 11.5).

**Figure 11.4** HIV incidence among heterosexual IDU testing at San Francisco General Hospital by year, 1994-1998



**Figure 11.5** HIV incidence among heterosexual IDU testing at San Francisco General Hospital by race/ethnicity, 1994-1998



## 12

# HIV/AIDS among Heterosexuals

## AIDS surveillance data

The number of AIDS cases among persons who acquired HIV infection through heterosexual contact is small relative to other risk groups. The number of new AIDS cases in this group peaked in 1993 with 40 cases diagnosed that year (Figure 12.1). The number of deaths among heterosexual non-IDU peaked in 1994 with 24 deaths occurring that year. The number of heterosexual non-IDU living with AIDS has increased steadily to a total of 208 by December 31, 2000.

The number of new heterosexual contact AIDS cases among whites peaked in 1992 and declined thereafter (Figure 12.2). Among African American heterosexual non-IDU AIDS cases, the number of new cases plateaued between 1993 and 1996 and declined to a lower plateau in 1997 and 1998. In 1994, the number of new AIDS cases among African American heterosexual non-IDU exceeded the number among whites. Although small relative to other risk groups, the number of new AIDS cases among heterosexual non-IDU remains highest among African Americans.

Figure 12.1 AIDS cases, deaths, and prevalence among heterosexuals by year, San Francisco, 1991-2000

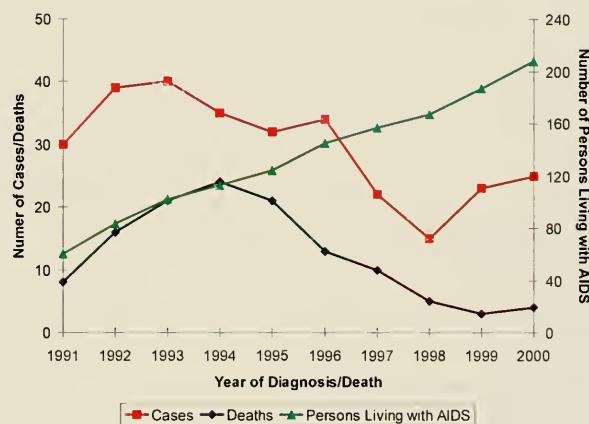
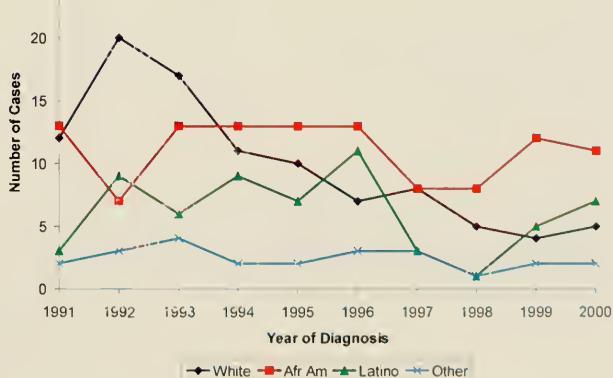


Figure 12.2 AIDS cases among heterosexuals by race/ethnicity and year of diagnosis, San Francisco, 1991-2000



The majority of heterosexually acquired AIDS cases are women (Table 12.1). Of the 288 women in this group, 122 (42%) reported sex with an IDU. Among the 83 men in this risk group, 34 (41%) reported an IDU partner. Fifty-three percent of men and 36% of women reported sex with an HIV infected partner of unknown risk.

## HIV seroprevalence and seroincidence data

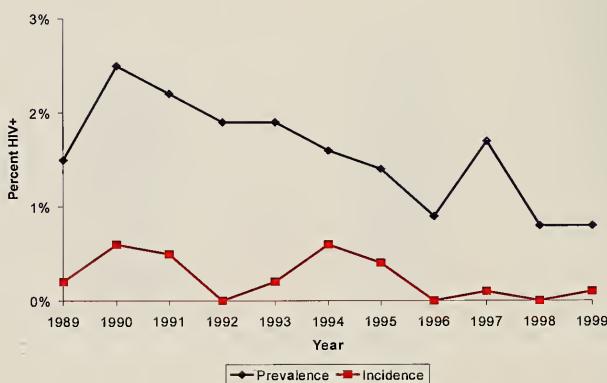
### STD Clinic Survey

Information on the prevalence of HIV was obtained through annual blinded seroprevalence surveys conducted at the San Francisco municipal sexually transmitted disease clinic between 1989 and 1999. Application of the Serologic Testing Algorithm for Recent HIV Seroconversion (STARHS) to serum stored from these surveys provided information on HIV seroincidence in this population (Schwarcz, et al, in press). The prevalence of HIV infection among heterosexual non-IDU patients at the STD clinic declined from a high of 2.5% in 1990 to 0.8% in 1999 (Figure 12.3). The incidence of HIV was low in all the years (less than 1% per year).

**Table 12.1** Heterosexually transmitted AIDS by exposure category and gender, diagnosed through December 2000, San Francisco

Exposure Category	Men Number (%)	Women Number (%)
Sex with injection drug user	34 ( 41 )	122 ( 42 )
Sex with bisexual men	0 ( 0 )	54 ( 19 )
Sex with persons with hemophilia	0 ( 0 )	3 ( 1 )
Sex with transfusion recipient with HIV+	5 ( 6 )	5 ( 2 )
Sex with HIV+ person of unknown risk	44 ( 53 )	104 ( 36 )
<b>Total</b>	<b>83 ( 100 )</b>	<b>288 ( 100 )</b>

**Figure 12.3** HIV prevalence and incidence among heterosexuals attending an STD clinic by year, San Francisco, 1989-1999



**San Francisco General Hospital Counseling and Testing data - Record Based Incidence Studies (RBIS)**

Data are available from persons who received voluntary HIV counseling and testing at San Francisco General Hospital (SFGH) more than once between 1994 and 1998. HIV seroconversions were identified through a record based review of persons who were HIV uninfected at their first SFGH test and whose subsequent test was positive (see Technical Notes "Record based incidence studies"). The incidence among heterosexuals who did not report injection drug use was low ( $\leq 0.5$  per 100 person-years) and did not change significantly during the study (Figure 12.4).

Incidence was higher for whites (0.8 per 100 person-years) than African Americans (0.2 per 100 person-years) (Figure 12.5). There were no seroconversions identified among Latino and Asian heterosexuals tested.

Figure 12.4 HIV incidence among heterosexuals testing at San Francisco General Hospital by year, 1994-1998

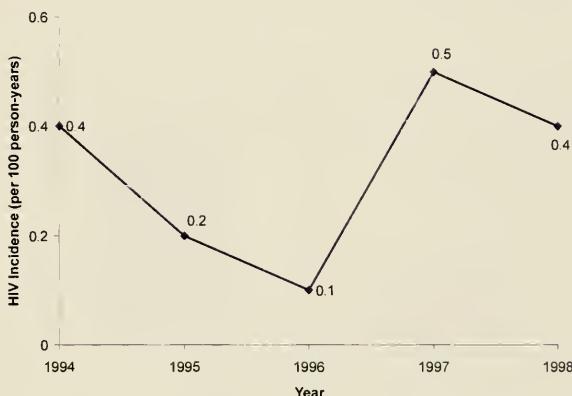
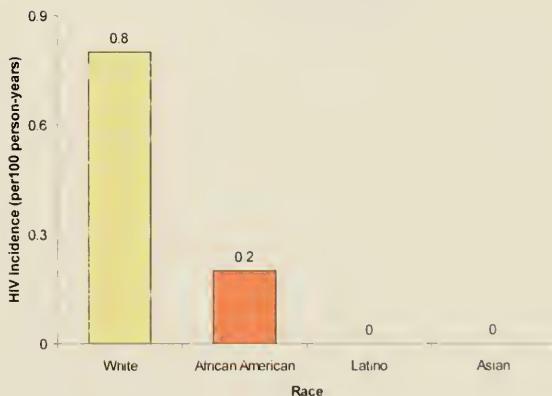


Figure 12.5 HIV incidence among heterosexuals testing at San Francisco General Hospital by race/ethnicity, 1994-1998

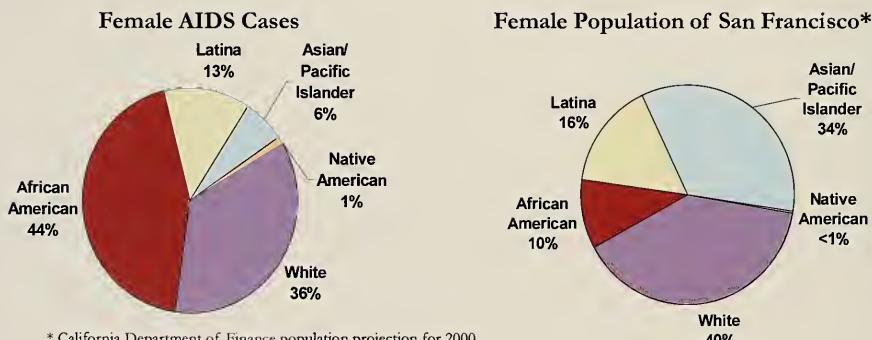


# HIV/AIDS among Women

## AIDS surveillance data

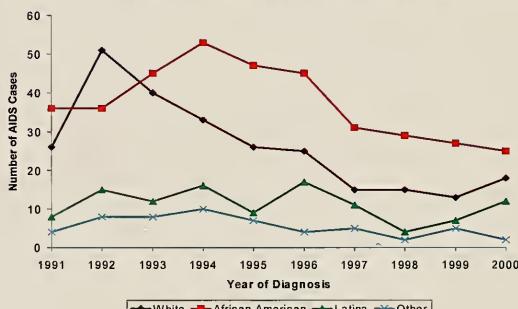
African American women comprise a disproportionate percent of the women with AIDS in San Francisco. Among female AIDS cases, 44% occurred among African Americans even though African American women comprise only 10% of the San Francisco female population (Figure 13.1). The number of new AIDS cases among African American women remained higher than women of other race/ethnic groups between 1991 and 2000 (Figure 13.2).

Figure 13.1 Female AIDS cases diagnosed through December 2000 and female population by race/ethnicity, San Francisco



\* California Department of Finance population projection for 2000.

Figure 13.2 Number of female AIDS cases by race/ethnicity and year of diagnosis, San Francisco, 1991-2000



## HIV seroprevalence and seroincidence data

### STD Clinic Survey

Information on the prevalence of HIV was obtained through annual blinded seroprevalence surveys conducted at the San Francisco municipal sexually transmitted disease clinic between 1989 and 1999. Application of the Serologic Testing Algorithm for Recent HIV Seroconversion (STARHS) to serum stored from these surveys provided information on HIV seroincidence in this population (Schwarz, et al., in press). For the years 1989 to 1999, overall HIV prevalence was 1.3% among women attending the STD clinic and HIV incidence was 0.4% per year (Figure 13.3).

### Survey of Childbearing Women

Estimates of the prevalence of HIV infection among childbearing women were obtained through blinded HIV testing of newborns between 1989 and 1995 and again in 1998. The survey was funded by the Centers for Disease Control and Prevention until 1995. In 1998, the California Department of Health Services provided funds for an additional year of the survey. HIV antibodies in newborns reflect HIV infection in the mothers because of transfer of maternal HIV antibody during pregnancy. The presence of HIV antibody in the infants does not necessarily reflect newborn HIV infection since many of these infants will serorevert. This has

Figure 13.3 HIV prevalence and incidence among women attending an STD clinic, San Francisco, 1989-1999

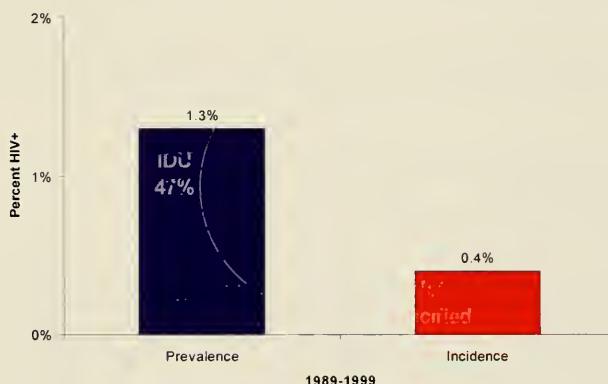
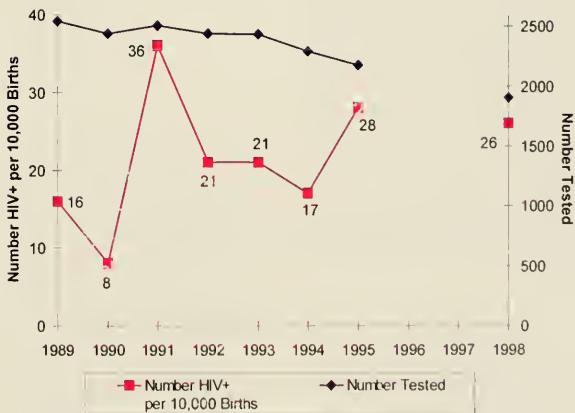


Figure 13.4 HIV prevalence among newborn infants and their mothers, San Francisco, 1989-1998\*



\* Surveys were not conducted for the years 1996 and 1997.

become more frequent with the use of antiretroviral prophylaxis during pregnancy which has markedly reduced the proportion of HIV-infected babies born to infected mothers. HIV prevalence among childbearing women ranged between a high of 36 per 10,000 births in 1991 to a low of 8 per 10,000 births in 1990 (Figure 13.4). The HIV prevalence in 1998 was similar to the rate in 1995 (26 per 10,000 births and 28 per 10,000 births respectively). The HIV prevalence among childbearing women in San Francisco is low relative to other parts of the United States and to the prevalence of HIV infection among high-risk women in San Francisco.

## Risk behavior data

### Young Women's Survey

The Young Women's Survey (YWS) was a population-based, door-to-door survey of women aged 18 to 29 years who resided in low-income neighborhoods in five counties in the San Francisco Bay Area (Ruiz, et al.). Between April 1996 and January 1998, 2,547 young women were interviewed. Participants were asked about sexual and drug use behaviors and tested for HIV and other STDs.

High-risk sexual activities and injection drug use varied significantly among participants who reported lifetime sexual activity with men only, both men and women, and women only. The reported prevalence of risk was greater among women who reported lifetime male and female partners, followed by women with male partners and women with female partners only (Table 13.1).

HIV prevention efforts should acknowledge that women who have both male and female partners may be at risk for HIV or other STDs from sexual contact with their male partners and their injection drug use.

**Table 13.1** Prevalence of selected high-risk sexual and injection drug use behaviors among young women in low-income neighborhoods by gender of lifetime sexual partners

	Both Male and Female Partners	Male Partners Only	Female Partners Only
<b>Sexual Risk Activities</b>			
Ever traded sex for drugs or money	38%	7%	0%
Traded sex for drugs or money within 6 months	21%	3%	0%
Ever had sex with MSM	30%	3%	0%
Sex with MSM w/in 6 months	10%	<1%	0%
Ever had sex with HIV+ man	5%	1%	0%
Sex with HIV+ man within 6 months	2%	<1%	0%
Ever had anal sex	55%	18%	0%
<b>Injection Drug Use</b>			
Ever injected drugs during lifetime	24%	2%	6%
Injected Heroin			
Ever Injected	17%	1%	6%
Injected w/in 6 months	9%	1%	0%
Injected during sex	6%	1%	0%
Injected Speed			
Ever Injected	14%	1%	0%
Injected w/in 6 months	6%	<1%	0%
Injected during sex	4%	<1%	0%

# HIV/AIDS among Adolescents and Young Adults

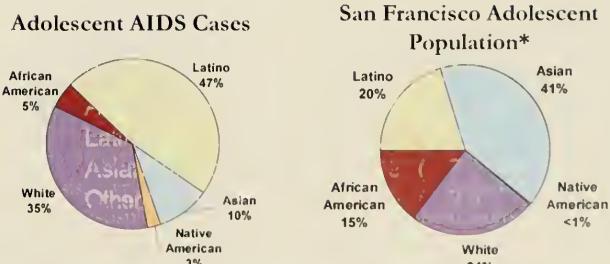
## AIDS surveillance data

As of December 31, 2000, 40 AIDS cases among adolescents (aged 13-19 years) and 531 cases among young adults (aged 20-24 years) were diagnosed in San Francisco (Table 14.1). The characteristics of young adults with AIDS are similar to other adults; the majority is MSM, white, and male. Male-male sex also accounts for the greatest proportion of adolescent AIDS cases. However, in contrast to young adults in which MSM-IDU are the second most frequent risk group, transfusion/ hemophilia-related cases account for 22% of adolescent AIDS cases. Thirteen percent of adolescent AIDS cases were perinatally acquired. Latinos (47%) and whites (35%) have the greatest representation among adolescent AIDS cases and are over-represented when compared with the general adolescent population in San Francisco (Figure 14.1).

Table 14.1 Adolescent and young adult AIDS cases by risk, gender, and race/ethnicity, diagnosed through December 2000, San Francisco

	13-19 Years Old (N=40)	20-24 Years Old (N=531)
<b>Risk</b>		
MSM	32%	61%
IDU	0%	9%
MSM-IDU	17%	23%
Transfusion/Hemophilia	22%	2%
Heterosexual	8%	4%
Perinatal	13%	0%
Unidentified	8%	1%
<b>Gender</b>		
Male	85%	94%
Female	15%	6%
<b>Race/Ethnicity</b>		
White	35%	63%
African American	5%	14%
Latino	47%	18%
Asian/Pacific Islander	10%	4%
Native American	3%	1%

Figure 14.1 Adolescent AIDS cases diagnosed through December 2000 and San Francisco adolescent population by race/ethnicity



\* California Department of Finance population projection for 2000.

# HIV/AIDS among Children

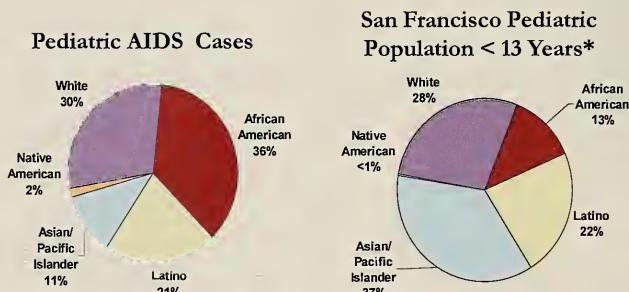
## AIDS surveillance data

The first pediatric AIDS case was diagnosed in San Francisco in 1980. Since that time, a cumulative total of 61 cases have been diagnosed in children less than 13 years of age in San Francisco through December 31, 2000. The number of pediatric AIDS cases found in San Francisco is lower than other cities in the United States with comparable prevalence of AIDS. This is due primarily to the lower rate of HIV and/or AIDS in women of childbearing years in San Francisco compared with other cities (females represent only 4% of cumulative AIDS cases in San Francisco). Of the 61 pediatric AIDS cases, 45 (74%) were classified as having acquired HIV infection perinatally (Table 15.1). Males and females are evenly distributed among pediatric AIDS cases. Proportionally, African American children are overrepresented among pediatric AIDS cases (36%) when compared with the general pediatric population in San Francisco (13%) (Figure 15.1).

**Table 15.1** Percent of cumulative pediatric AIDS cases by exposure category, gender, and race/ethnicity, San Francisco, December 2000

	<b>Cumulative Pediatric AIDS (N=61)</b>
<b>Exposure Category</b>	
Transfusion/Hemophilia	26%
Perinatal	74%
<b>Gender</b>	
Male	51%
Female	49%
<b>Race/Ethnicity</b>	
White	30%
African American	36%
Latino	21%
Asian/Pacific Islander	11%
Native American	2%

**Figure 15.1** Pediatric AIDS cases, diagnosed through December 2000, and San Francisco population by race/ethnicity



\* California Department of Finance population projection for 2000.

Among the perinatally acquired AIDS cases, 47% of their HIV-infected mothers acquired HIV infection through injection drug use, 33% through heterosexual contact, and 20% did not have a risk reported (Figure 15.2).

### Perinatal HIV data

Although HIV is not currently a reportable condition, data on HIV in San Francisco are gathered through the Pediatric Spectrum of Disease (PSD) project (see Technical Notes "Pediatric Spectrum of Disease"). A perinatal HIV exposure case was defined as a child less than or equal to 12 years old born to a mother documented to have HIV before delivery and without a history of blood or blood product transfusion before 1985.

Through December 31, 2000, 275 infants were born to HIV-infected mothers in San Francisco. Fifty-three (19%) of these infants were confirmed as HIV infected, 202 (73%) seroreverted, and 20 (7%) are of unknown serostatus (Table 15.2). The majority (53%) of perinatally exposed infants were African American. Whites and Latinos each accounted for 19% of the infants.

Figure 15.2 Perinatally acquired AIDS cases by mother's exposure category, diagnosed through December 2000, San Francisco

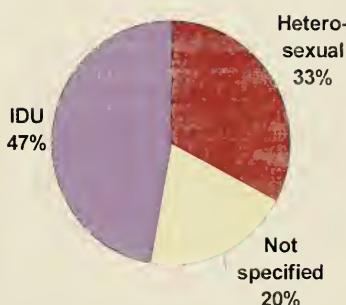
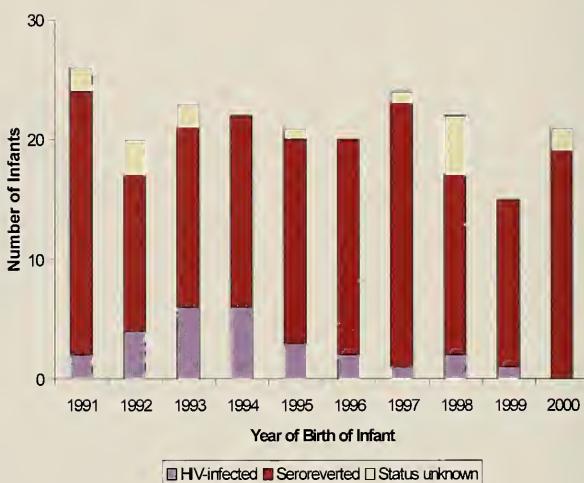


Table 15.2 Infants born to HIV-infected mothers by infant's HIV status and race/ethnicity, San Francisco, through 2000

	N (%)
<b>Total</b>	<b>275</b>
<b>Infant HIV Status</b>	
HIV-infected	53 ( 19 )
Seroreverted (HIV-)	202 ( 73 )
Unknown	20 ( 7 )
<b>Race/Ethnicity</b>	
White	51 ( 19 )
African American	147 ( 53 )
Latino	52 ( 19 )
Asian/Pacific Islander	19 ( 7 )
Other/Unknown	6 ( 2 )

In more recent years, the number of perinatally exposed infants who were confirmed as HIV infected has declined; between 1996 and 1999, there were only six HIV infected infants born to infected women in San Francisco (Figure 15.3). This is due to the improved therapies for the mother throughout her pregnancy and to the use of prophylaxis in the mother and infant to prevent perinatal transmission.

Figure 15.3 Infants born to HIV-infected mothers by year of birth and infant's HIV status, San Francisco, 1991-2000



## 16

# HIV/AIDS among Transgender Persons

## AIDS surveillance data

Persons with AIDS are categorized as transgender if information regarding changes in gender identity is listed in the medical record. Information on transgender has been collected since 1996. As of December 31, 2000, a total of 249 transgender AIDS cases have been diagnosed (Table 16.1). Comparison of transgender AIDS cases to the total number of AIDS cases diagnosed through December 31, 2000 demonstrates some important differences. Seventy percent of transgender cases were nonwhite compared to 26% of total AIDS cases. Transgender persons with AIDS were more likely to inject drugs than were total AIDS cases (53% and 20%, respectively). Transgender AIDS cases were also younger than total AIDS cases.

Table 16.1 Characteristics of transgender<sup>#</sup> AIDS cases and cumulative AIDS cases diagnosed through December 2000, San Francisco

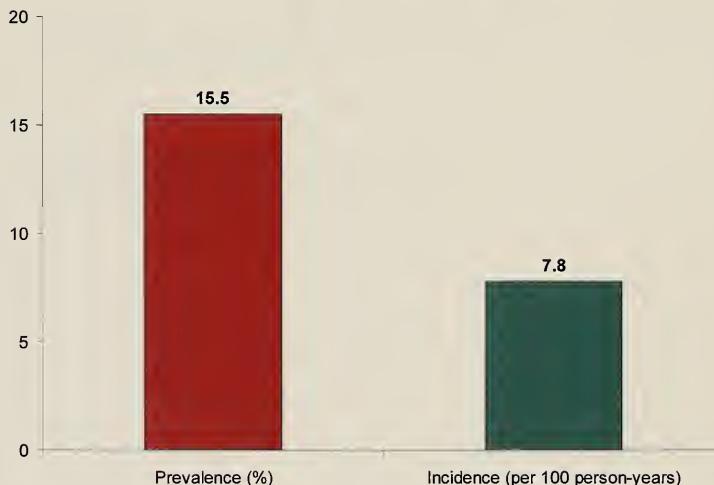
	Transgender AIDS Cases Diagnosed through December 2000		AIDS Cases Diagnosed through December 2000	
<b>Total</b>	<b>249</b>		<b>27,422</b>	
<b>Race/Ethnicity</b>				
White	74	30%	20,321	74%
African American	81	33%	3,298	12%
Latino	70	28%	2,899	11%
Asian/Pacific Islander	22	9%	775	3%
Native American	2	1%	129	<1%
<b>Injection Drug Use</b>				
Yes	131	53%	5,388	20%
No	118	47%	22,034	80%
<b>Age at Diagnosis</b>				
0 - 19	2	1%	101	<1%
20 - 29	70	28%	3,259	12%
30 - 39	112	45%	12,560	46%
40 - 49	53	21%	8,417	31%
50+	12	5%	3,085	11%

# See Technical Notes "Transgender Status."

## HIV incidence and prevalence among male-to-female transgenders

Data are available for male-to-female (MTF) transgendered persons who received voluntary HIV counseling and testing at San Francisco confidential and anonymous testing sites between 1997 and 2000. The sample includes only those who self-reported a prior HIV-negative test. HIV seroconversions were identified as those who tested HIV positive at the time of the current test. The seroprevalence among MTF transgendered persons who tested at HIV confidential and anonymous test sites between July 1997 and June 2000 was 15.5% and the incidence was 7.8 per 100 person-years.

**Figure 16.1** HIV prevalence and incidence among transgendered persons testing at HIV confidential and anonymous testing sites, July 1997-June 2000



## 17

# Homeless Persons with AIDS

## AIDS surveillance data

Information on homelessness among persons diagnosed with AIDS has been collected since 1990. The proportion of persons with AIDS who are homeless at the time of diagnosis has been increasing each year since 1990 (Figure 17.1). Fifteen percent of AIDS cases diagnosed in 2000 were homeless at the time of their diagnosis. Compared to the total number of AIDS cases diagnosed between 1990 and 2000, homeless persons with AIDS were more likely to be women, nonwhite, injection drug users, and younger (Table 17.1).

Figure 17.1 Percent of homeless AIDS cases by year of diagnosis, San Francisco, 1990-2000

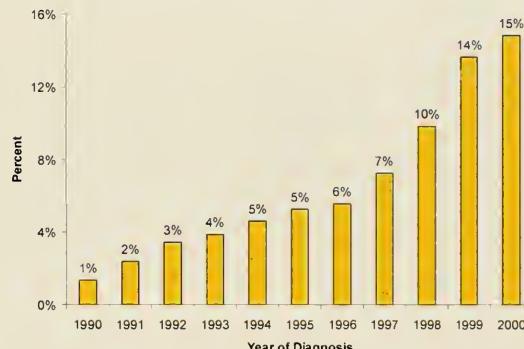


Table 17.1 Characteristics of homeless AIDS cases and AIDS cases diagnosed between 1990 and 2000, San Francisco

	Homeless AIDS Diagnosed 1990-2000 (N=823)	AIDS Cases Diagnosed 1990-2000 (N=17,621)
<b>Gender</b>		
Male	87%	95%
Female	13%	5%
<b>Race/Ethnicity</b>		
White	44%	70%
African American	39%	14%
Latino	15%	12%
Other	2%	4%
<b>Exposure Category</b>		
MSM	21%	74%
IDU	43%	9%
MSM-IDU	32%	13%
Heterosexual Contact	3%	2%
Other	1%	2%
<b>Age at Diagnosis</b>		
0 - 19	<1%	<1%
20 - 29	19%	11%
30 - 39	47%	45%
40 - 49	27%	32%
50+	7%	12%

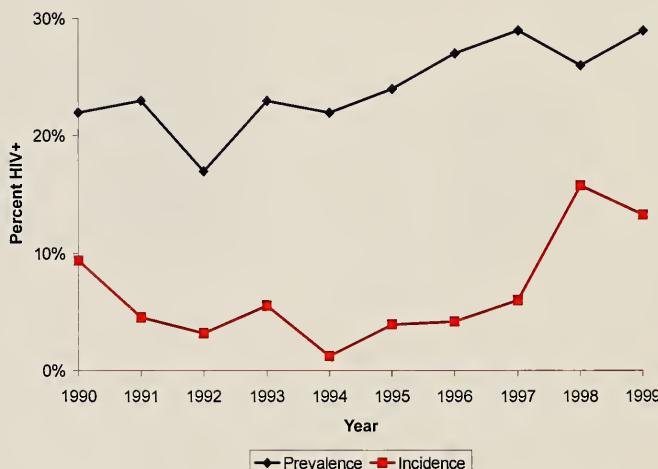
# Sexually Transmitted Diseases and HIV Infection

## HIV seroprevalence and seroincidence data

### *STD Clinic Survey*

Information on the prevalence of HIV was obtained through annual blinded seroprevalence surveys conducted at the San Francisco municipal sexually transmitted disease clinic. Application of the Serologic Testing Algorithm for Recent HIV Seroconversion (STARHS) to serum stored from these surveys provided information on HIV seroincidence in this population (Schwarcz, et al, in press). Information on diagnosis of gonorrhea was collected between 1990 and 1999. Among patients who were diagnosed with gonorrhea at the time of blinded HIV testing, the prevalence increased from 22% in 1990 to 29% in 1999 (Figure 18.1). The HIV seroincidence among patients diagnosed with gonorrhea fluctuated (range 1% to 11%) but was high in virtually every year examined.

**Figure 18.1** HIV prevalence and incidence among STD clinic patients diagnosed with gonorrhea by year, San Francisco, 1990-1999



## 19

# Tuberculosis Screening among Persons with AIDS

HIV infection is known to increase the risk of progression from tuberculosis (TB) infection to active TB disease. All persons who are HIV positive or who are at risk for HIV infection should be screened for TB. In order to evaluate the missed opportunities to prevent TB in persons with AIDS, we conducted medical chart review to collect additional information on TB screening. Of the 1,552 persons diagnosed with AIDS between 1996 and 1997, only 30% received a TB screening test within one year of their HIV diagnosis (Figure 19.1). Women, nonwhites, IDU, and persons diagnosed in public health care facilities were more frequently tested for TB within one year of their HIV diagnosis (Table 19.1).

Figure 19.1 TB testing among AIDS cases diagnosed in 1996-1997, San Francisco

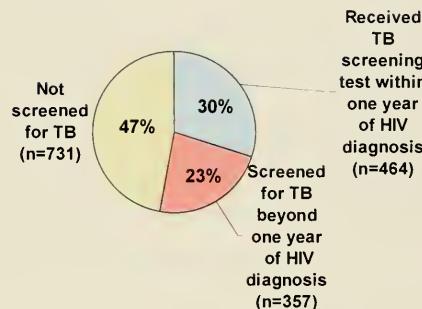


Table 19.1 Percent of persons diagnosed with AIDS in 1996-1997 who had been tested for TB within one year of HIV infection, San Francisco

	Number of Persons Diagnosed with AIDS in 1996-1997*	Percent Tested for TB within One Year of HIV Infection
<b>Total</b>	1,552	30%
<b>Gender</b>		
Male	1,432	29%
Female	120	40%
<b>Race/Ethnicity</b>		
White	964	24%
African American	301	39%
Latino	220	40%
Other	67	40%
<b>Risk for HIV</b>		
MSM	1,060	26%
IDU	237	38%
MSM-IDU	182	39%
Other	73	34%
<b>Diagnosing Facility #</b>		
Public	712	41%
Private	697	17%
Other	143	36%

\* Excludes cases for whom chart review is not available.

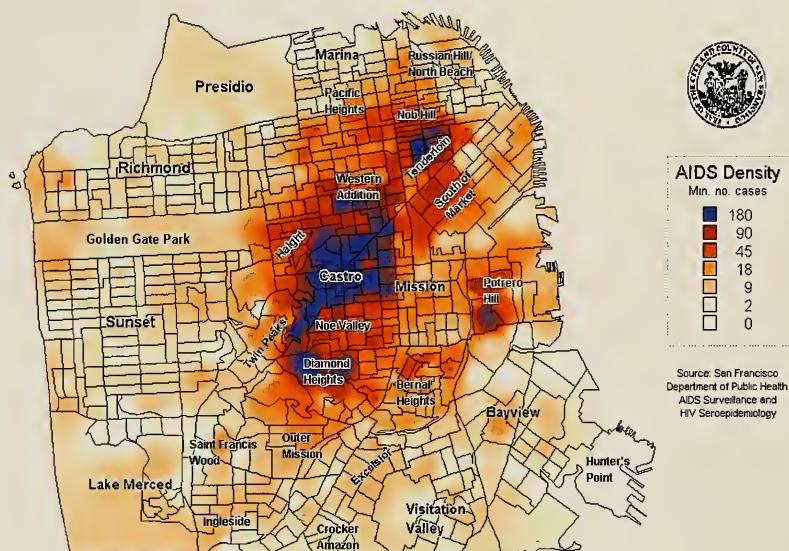
# Excludes persons who were diagnosed at a facility outside of San Francisco.

# Geographic Distribution of AIDS

Displaying the number of AIDS cases in given neighborhoods demonstrates that AIDS cases, particularly among the various risk groups, are not evenly distributed around the City. Selected neighborhoods, notably the Castro and Tenderloin, are home to a greater number of AIDS cases than many of the outlying sections of the City. Understanding where people live at the time of their AIDS diagnosis can be useful in establishing medical, social, and prevention services.

The vast majority of MSM with AIDS resided in the Castro section of San Francisco at the time of their AIDS diagnosis (shown in blue, Map 20.1). In addition to the Castro, parts of Diamond Heights, Potrero Hill, and the Tenderloin have been home to the greatest density of MSM with AIDS. Each of these sections have been home to at least 180 MSM AIDS cases. The neighborhoods that are adjacent to these

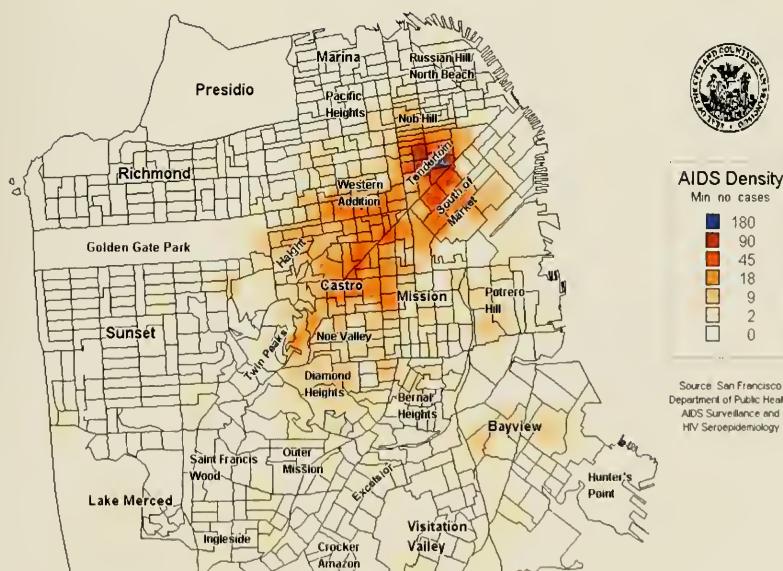
Map 20.1 AIDS density among MSM in San Francisco, 2000



areas with the greatest density of MSM AIDS cases have high but somewhat lower number of MSM AIDS cases. Not surprisingly, the neighborhoods with the greatest density of MSM AIDS cases are those neighborhoods in which large number of MSM have resided. The outlying sections of the City such as the Sunset and Richmond districts have been home to few MSM with AIDS.

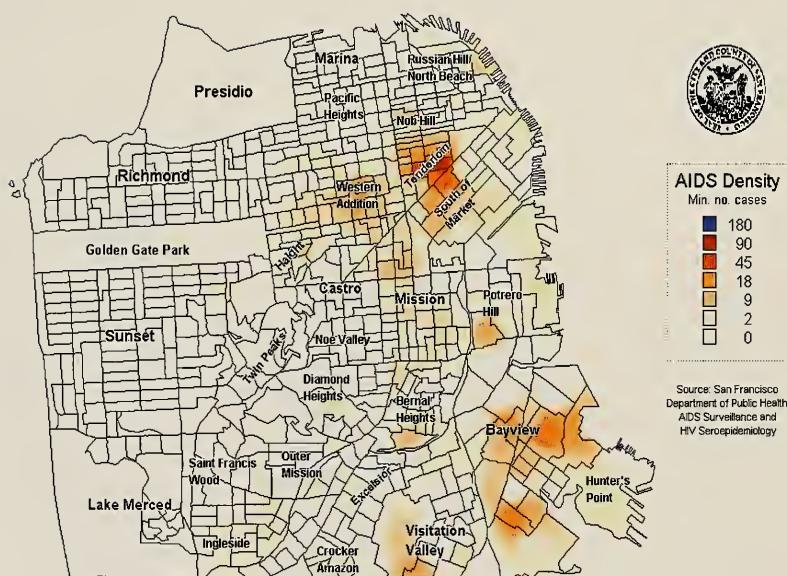
Although the number of MSM with AIDS who also injected drugs (MSM-IDU) is not as great as MSM non-IDU AIDS cases, the residence at the time of AIDS diagnosis is similar (Map 20.2). The density of MSM-IDU in the Tenderloin remains quite high with a minimum of 180 cumulative cases in that neighborhood.

Map 20.2 AIDS density among MSM-IDU in San Francisco, 2000



Heterosexual IDU reside predominantly in the Tenderloin, Western Addition, Bayview, and Visitation Valley (Map 20.3). Of these neighborhoods, the greatest density of heterosexual IDU AIDS cases is in the Tenderloin. Overall, the density of heterosexual IDU AIDS cases is less than the density of MSM AIDS cases.

Map 20.3 AIDS density among non-MSM IDU in San Francisco, 2000



Heterosexual contact has been an infrequent transmission category among San Francisco AIDS cases. This is demonstrated in Map 20.4, in which none of the highlighted areas contain more than 18 AIDS cases. The neighborhoods in which heterosexual non-IDU AIDS cases reside are similar to the heterosexual IDU AIDS cases. In contrast to the Castro, which had the highest density of MSM AIDS cases, none of the heterosexual AIDS cases resided in the Castro.

Map 20.4 AIDS density among heterosexuals in San Francisco, 2000





# T

# Technical Notes

## AIDS Incidence Rates

Annual race-specific rates are calculated as the number of cases diagnosed for a particular race/ethnic group during each year divided by the population for that race/ethnicity, multiplied by 100,000. These rates are calculated separately for males and females. Population denominators are based on the population projections for the years 1991-2000, from the Demographic Research Unit, Department of Finance, California ([www.dof.ca.gov](http://www.dof.ca.gov)).

## AIDS Survival

Survival was calculated as the time between the date of first AIDS-defining opportunistic illness (AIDS-OI) and the date of death. Persons who met only the 1993 AIDS case definition (largely CD4 count <200 or percent <14%) were not included until they developed an AIDS-OI. The occurrence of AIDS-OI and follow-up information of cases was obtained through retrospective and prospective reviews of laboratory records and medical charts. Dates of death were obtained through review of local death certificates, reports from the State Office of AIDS, and matches with the National Death Index (NDI). The most recent NDI match included deaths that occurred through December 31, 1998. Persons not known to have died were censored at the date of their last known follow-up or at December 31, 1998, whichever was more recent. The median number of months of survival by year of AIDS-OI is presented only through 1996 because longer follow-up time is needed for persons diagnosed with an AIDS-OI in 1997 or later. Similar methods were used in previous published analyses of AIDS survival (Schwarz, et al., 2000; Katz, et al., 1998).

## Causes of Death

Cause of death information on death certificates is coded using the International Classification of Diseases, 9th Revision (ICD-9) by state nosologists or nosologists at the National Center for Health Statistics. These codes are then processed and evaluated using a computer system to determine the underlying and contributory causes of death. We obtained the ICD-9 coded causes of death from the California multiple-cause-of-death computer tape for persons with AIDS who died prior to 1996. For AIDS deaths that occurred in 1996 and after, the cause of death information was obtained through the match with the National Death Index. Deaths attributable to HIV infection or AIDS are coded as 042-044. In addition, the following conditions, if listed on the death certificates, are included as "AIDS defining conditions": candidiasis, cervical cancer, coccidioidomycosis, cryptococcosis, cryptosporidiosis, cytomegalovirus, HIV encephalopathy, herpes simplex, histoplasmosis, isosporiasis, Kaposi's sarcoma, lymphoid interstitial pneumonia, lymphomas, mycobacterial infections, pulmonary tuberculosis, extrapulmonary tuberculosis, *Pneumocystis carinii* pneumonia, progressive multifocal leukoencephalopathy, salmonella sepsis, toxoplasmosis, HIV wasting.

## Grouping of Data Categories

Data regarding certain race/ethnic or risk categories are grouped together when the number of persons with HIV/AIDS in that particular group is small and/or does not present significant trends. For example, “Other” in the Race/Ethnicity breakdown represents Asian/ Pacific Islander and Native American; “Other” in the Exposure Category breakdown includes transfusion, hemophilia, heterosexual, perinatal AIDS, or persons of unidentified risk.

## HIV Seroprevalence and Seroincidence Surveys

The San Francisco Department of Public Health HIV Seroepidemiology Unit has conducted unlinked cross-sectional HIV prevalence surveys in selected clinics in San Francisco serving populations at high risk for HIV infection. Settings included the municipal sexually transmitted disease (STD) clinic and the city jail. Residual blood specimens originally collected for routine clinical purposes are tested for HIV antibodies after all personal identifying information has been removed from the specimen. Neither HIV test results nor risk information can be linked to individuals. Detailed descriptions of these surveys have been described elsewhere (Dondero, et al., 1990; Pappainoanou, et al., 1990; Schwarcz, et al., 1995).

HIV seroincidence was derived by applying the Serological Testing Algorithm for Recent HIV Seroconversion (STARHS) to HIV positive specimens that were collected in the seroprevalence surveys and from anonymous voluntary HIV counseling and testing sites (Janssen, et al., 1998; McFarland, et al., 1999). Retested HIV-positive specimens that were nonreactive on the less sensitive assay were defined as recent HIV infections (seroconverting within the preceding 129 days). HIV incidence was calculated as the number of recent infections divided by the number of recent infections plus the number of HIV negative specimens. HIV incidence, expressed as percent per year, was estimated by multiplying the rate of recent infection by  $(365 \div 129) \times 100$ .

## Pediatric Spectrum of Disease

The Pediatric Spectrum of Disease (PSD) project was established in 1989 by the Centers for Disease Control and Prevention and collects data from eight areas throughout the United States, including Northern California (Maldonado, 1996). In Northern California, hospital surveillance for children less than 13 years old infected with HIV or for infants born to infected mothers has occurred at eight pediatric hospitals (including the University of California at San Francisco and San Francisco General Hospital) (Maldonado, et al., 1995). Records from HIV positive pediatric patients cared for through the California Children's Services program, a state agency providing funding and case management for HIV-positive children, are also included in the PSD project.

## Record Based Incidence Studies (RBIS)

HIV incidence was retrospectively calculated among persons who repeatedly tested for HIV antibody between 1994 and 1998 through publicly funded HIV counseling and testing sites or at San Francisco's county hospital or one of its affiliated satellite community clinics. Linkage of HIV test results in computerized databases identified "seroconverters" as individuals who had a negative antibody test followed by a positive test. The interval between tests was used as the person-time at risk (Kellogg, et al., submitted).

## Transgender Status

One population that has traditionally been overlooked in reports of AIDS surveillance is persons who self-identify as transgender. Traditionally, transgendered persons had been coded by their biological gender. In San Francisco, we recognize the unique identity of transgendered individuals and the need to correct this historical oversight. In September 1996, the San Francisco Health Department began noting transgender status when this information is contained in the medical record. Transgendered individuals are listed as either male-to-female or female-to-male. Please note that there are several limitations to our transgender data. We believe that our report likely underestimates the number of transgendered persons affected by AIDS because data collected for AIDS reporting are derived from the medical record. Consequently, information that may be discussed with the health care provider but that is not recorded in the medical record is generally not available for the purposes of AIDS case reporting. Because information about transgender status was not collected in a uniform way until September 1996, we have limited data on transgender prior to this, and therefore cannot perform valid time trend analysis for this group.

## Treatments

The type and starting date of HIV antiretroviral therapy and prophylaxis against *Pneumocystis carinii* pneumonia or *Mycobacterium avium* complex is obtained at time of initial case report and through retrospective and prospective reviews of medical records. Persons noted to have received a protease inhibitor or a nonnucleoside reverse transcriptase inhibitor were considered to have received highly active antiretroviral therapy (HAART). Use of HIV therapies among persons living with AIDS by year was calculated as the number of persons who were alive at the end of each year and who started the treatment prior to or during that year, divided by the total number of persons living with AIDS at the end of each year. Use of HAART among persons living with AIDS by gender, race/ethnicity, and risk was calculated as the number of persons living with AIDS as of December 31, 2000, for each gender, race, or risk group who were noted to have ever received HAART, divided by the total number of persons living with AIDS as of December 31, 2000, for each gender, race, and risk group. Persons who were diagnosed at a facility outside of San Francisco and persons whose treatment information is not available were excluded.



# B

# Bibliography

Dondero TJ, Pappaioanou M, Curran JW. Monitoring the levels and trends of HIV infection: the Public Health Service's HIV Surveillance Program. *Public Health Rep* 1990;103:213-220.

Janssen RS, Satten GA, Stramer SL, et al. New testing strategy to detect early HIV-1 infection for use in incidence estimates and for clinical and prevention purposes. *JAMA* 1998;280:42-48.

Katz MH, Hsu L, Lingo M, Woelffer G, Schwarcz SK. Impact of socioeconomic status on survival with AIDS. *Am J Epidemiol* 1998;148:282-291.

Kellogg TA, McFarland W, Perlman J, Weinstock H, Bock S, Katz MH, Gerberding J, Bangsberg DR. HIV Incidence among repeat HIV testers at a county hospital, San Francisco, USA (submitted).

Maldonado, Yvonne and the Northern California Pediatric HIV Consortium. The Northern California Pediatric HIV Consortium and the Pediatric Spectrum of Disease Project. California HIV/AIDS Update. October 1996;Vol 9, No 4.

Maldonado YA, Wang NE, Caldwell B, and the Northern California Pediatric HIV Consortium. Factors associated with early clinical recognition of children with perinatal Human Immunodeficiency Virus infection. *J Infect Dis* 1995;171:689-692.

McFarland W, Busch MP, Kellogg TA, Rawal BD, Satten GA, Katz MH, Dilley J, Janssen RS. Detection of early HIV infection and estimation of incidence using a sensitive/less-sensitive enzyme immunoassay testing strategy at anonymous counseling and testing sites in San Francisco. *JAIDS* 1999;22:484-489.

Pappaioanou M, Dondero TJ Jr, Peterson LR, et al. The family of HIV seroprevalence surveys: objectives, methods, and uses of sentinel surveillance for HIV in the United States. *Public Health Rep* 1990;105:113-119.

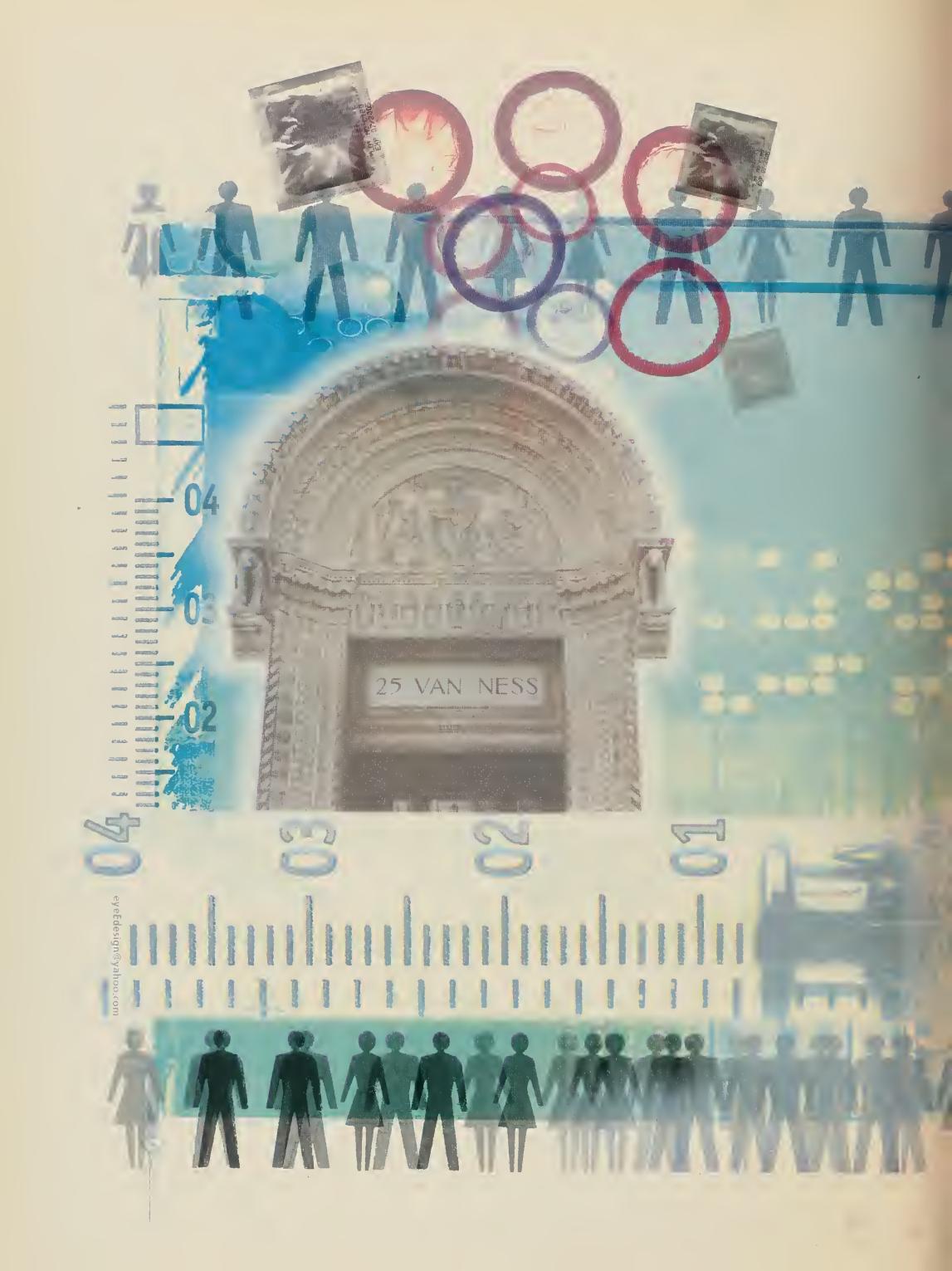
Ruiz J, Molitor F, Parikh-Patel A. HIV, hepatitis, STDs, and related risk behaviors among young women residing in low income neighborhoods in Northern California, April 1996-January 1998. California Department of Health Services, Prevention Services, Office of AIDS, HIV/AIDS Epidemiology Branch.

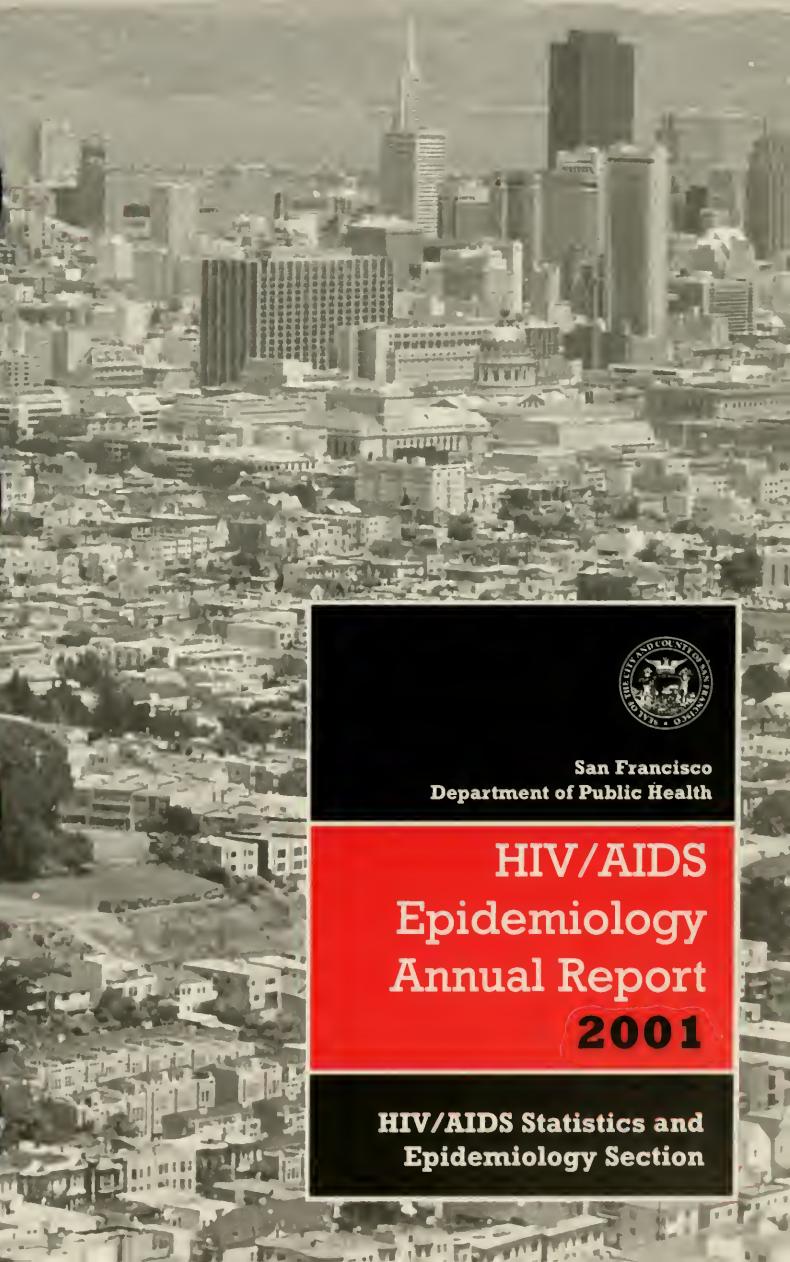
Schwarcz SK, Hsu LC, Vittinghoff E, Katz MH. The impact of protease inhibitors and other antiretroviral treatments on AIDS survival in San Francisco, 1987-1996. *Am J Epidemiol* 2000;152:178-185.

Schwarz SK, Kellogg TA, Kohn RP, Katz MH, Lemp GF, Bolan GA. Temporal trends in HIV seroprevalence and sexual behaviors at a municipal sexually transmitted disease clinic, 1989-1992. *Am J Epidemiol* 1995;142:314-322.

Schwarz SK, Kellogg TA, McFarland W, et al. Differences in the temporal trend of HIV seroincidence and seroprevalence among sexually transmitted disease clinic patients, 1989-1998: Application of the serologic testing algorithm for recent HIV seroconversion. *Am J of Epidemiol* (in press).







San Francisco  
Department of Public Health

# HIV/AIDS Epidemiology Annual Report 2001

HIV/AIDS Statistics and  
Epidemiology Section



# HIV/AIDS Epidemiology Annual Report **2001**

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## E

# Executive Summary

Our most recent HIV/AIDS data demonstrate local successes and failures in HIV prevention and care. First, the good news. The number of new AIDS cases continued to decline in 2001 compared to 2000. Moreover, absolute declines in new AIDS cases are occurring in all racial/ethnic groups and among both men and women. Because new AIDS cases represent late stage HIV infection in persons infected with HIV many years ago, the declines in AIDS cases today can be attributed to prevention successes years ago and to more recent breakthroughs in treatment. Coupled with the decline in new AIDS cases has been a continued drop in the number of AIDS deaths. We attribute this decline in mortality from AIDS to both a delay in the progression of HIV disease to AIDS (as occurs with improved treatment for HIV infection) as well as to the continued decline in the incidence of AIDS.

We have other successes that we are beginning to take for granted, but are well worth noting. As of this writing, not a single child under 13 years old was diagnosed with AIDS in San Francisco in 2001. Antiretroviral treatment to prevent mother-to-child transmission and continued low prevalence of HIV infection among women in San Francisco in general account for this success. The weight of epidemiological evidence suggests that HIV transmission between heterosexuals remains relatively rare in San Francisco. Recent studies also point to low incidence of HIV among heterosexual injection drug users (IDU), an indication that our city's support for needle exchange and substance use treatment programs are paying off. Finally, only one San Franciscan AIDS case associated with blood transfusion was reported for 2001. The risk of acquiring HIV from a blood transfusion in San Francisco is now estimated to be one in a million.

Tempering the good news of continued declines in AIDS cases and deaths, the rates of decline have slowed once again from 2000 to 2001. We are approaching the limits of our past successes in preventing new HIV transmission and our current ability to stave off disease progression. While improvements in survival with AIDS due to effective treatment have remarkably benefited individuals and society, they have also resulted in an unprecedented need for services for HIV-infected persons. Because life is extended, the number of persons living with AIDS continues to rise. In fact, there are more persons living with AIDS in San Francisco than ever before. Similarly, the number of persons living with HIV infection who have not yet been diagnosed with AIDS continues to increase. Prevention efforts aimed at HIV-infected persons have emerged as one of the key components of an effective prevention strategy.

While it is extremely beneficial to increase the life expectancy and quality of life for persons with HIV infection and AIDS, an effect of the improved survival has been that HIV infection is not frightening to most people as it was prior to the improved therapies. Thus, uninfected persons may be less fearful of acquiring HIV infection and therefore more likely to engage in high-risk behaviors. Recent evidence points to continued increases in sexual risk behavior in the population most severely burdened by AIDS in San Francisco – men who have sex with men (MSM). Consider the indicators from diverse sources in aggregate: male rectal gonorrhea continues to increase; syphilis is exponentially expanding among MSM; sexually transmitted diseases among MSM living with AIDS are increasing; the frequency of anal sex, unpro

tected anal sex, and unprotected anal sex with partners of unknown HIV serostatus are increasing; and HIV seroconversions among MSM are increasing or remaining high. Data collected among MSM who also inject drugs indicate the same worrisome trends. Given that MSM IDU have extremely high prevalence and incidence of HIV infection, these trends are even more concerning. The hoped for community benefit of antiretroviral treatment in suppressing HIV transmission has been overwhelmed by increases in sexual risk behavior among MSM and MSM IDU.

Although data are limited, male to female transgender persons (MTF) also appear to have an increased burden of disease. We estimate that of the approximately 3,000 MTF in San Francisco, more than one-third are currently infected with HIV and the present rate of new HIV infections exceeds that of any other population at risk. We are expanding efforts to learn more about the specific risk factors that contribute to these alarming rates of infection and to develop specific prevention programs.

In the absence of a cure or vaccine, or new improvements in treatment and prevention, we may inexorably witness a new rise in AIDS cases and deaths in San Francisco. We hope that our future reports will be more heavily weighted with good news.

## 1

# Overview of HIV/AIDS in San Francisco

As of December 31, 2001, a cumulative total of 27,923 AIDS cases were diagnosed in San Francisco. This comprises 23% of California AIDS cases and four percent of cases reported nationally. As of June 2001, San Francisco ranked third in the cumulative number of AIDS cases among metropolitan areas nationwide. Compared to California and the United States as a whole, AIDS cases in San Francisco are more likely to be male, white, and to occur among men who have sex with men (MSM), including MSM who also inject drugs (MSM IDU) (Table 1.1).

**Table 1.1 Characteristics of cumulative AIDS cases in San Francisco, California, and the United States<sup>#</sup>**

	San Francisco (N = 27,923)		California (N = 123,819)	United States (N = 793,026)
	Number	%	%	%
<b>Gender</b>				
Male	26,578	95%	92%	82%
Female	1,072	4%	8%	18%
Transgender*	273	1%	—	—
<b>Race/Ethnicity</b>				
White	20,616	74%	60%	42%
African American	3,404	12%	17%	38%
Latino	2,959	11%	20%	18%
Asian/Pacific Islander	809	3%	2%	<1%
Native American	135	<1%	<1%	<1%
<b>Exposure Category</b>				
MSM	21,415	77%	69%	46%
IDU	1,967	7%	10%	25%
MSM IDU	3,630	13%	9%	6%
Heterosexual	387	1%	5%	11%
Transfusion/Hemophilia	267	1%	2%	2%
Other/Unidentified	257	1%	5%	10%

<sup>#</sup> San Francisco data are reported through February 2002 for cases diagnosed through December 2001. California data are reported through December 2001; U.S. data are reported through June 2001.

\* The Transgender category includes 26 male to female and 6 female to male persons with AIDS. Transgender data are not reported by California and the United States. See Technical Notes "Transgender Status".

MSM account for the majority of male AIDS cases within all race/ethnic groups (Table 1.2). Among African American men, heterosexual injection drug use is the second most frequent exposure category while MSM IDU represents the second most frequent exposure among men of all other race/ethnic groups. Less than one percent of men acquired their infection through heterosexual contact.

The most frequent exposure category among white, African American, Latino, and Native American women with AIDS is injection drug use, followed by heterosexual contact. Among Asian/Pacific Islander women, 43% acquired their infection through heterosexual contact, 31% through injection drug use, and 22% through transfusion of blood or blood products.

**Table 1.2** Cumulative AIDS cases by gender, exposure category, and race/ethnicity, diagnosed through December 2001, San Francisco

	White Number ( % )	African American Number ( % )	Latino Number ( % )	Asian/Pacific Islander Number ( % )	Native American Number ( % )
<b>Male</b>					
MSM	16,891 ( 84 )	1,574 ( 55 )	2,161 ( 79 )	601 ( 84 )	67 ( 55 )
IDU	484 ( 2 )	648 ( 23 )	174 ( 6 )	20 ( 3 )	10 ( 8 )
MSM/IDU	2,570 ( 13 )	522 ( 18 )	310 ( 11 )	46 ( 6 )	42 ( 35 )
Heterosexual	34 ( <1 )	31 ( 1 )	17 ( 1 )	7 ( 1 )	0 ( 0 )
Transfusion/					
Hemophilia	104 ( 1 )	17 ( 1 )	29 ( 1 )	26 ( 4 )	0 ( 0 )
Other/Unidentified	65 ( <1 )	49 ( 2 )	59 ( 2 )	18 ( 3 )	2 ( 2 )
<b>Male Subtotal</b>	<b>20,148</b>	<b>2,841</b>	<b>2,750</b>	<b>718</b>	<b>121</b>
<b>Female</b>					
IDU	208 ( 54 )	321 ( 68 )	60 ( 43 )	21 ( 31 )	11 ( 92 )
Heterosexual	110 ( 29 )	102 ( 22 )	54 ( 39 )	29 ( 43 )	1 ( 8 )
Transfusion/					
Hemophilia	46 ( 12 )	17 ( 4 )	13 ( 9 )	15 ( 22 )	0 ( 0 )
Other/Unidentified	18 ( 5 )	32 ( 7 )	12 ( 9 )	2 ( 3 )	0 ( 0 )
<b>Female Subtotal</b>	<b>382</b>	<b>472</b>	<b>139</b>	<b>67</b>	<b>12</b>
<b>Transgender</b>	<b>86</b>	<b>91</b>	<b>70</b>	<b>#</b>	<b>#</b>

# There were a total of 26 transgender persons of Asian/Pacific Islander and Native American race/ethnicity. The number of transgender Native Americans with AIDS was less than five.

Table 1.3 presents estimated sizes of populations at risk for HIV, the number of persons living with HIV and the projected number acquiring HIV in the year 2001 in San Francisco. The table is identical to that included in our 2000 Annual Report as a summary of the work of a panel of experts meeting in 2000 and 2001. Estimates are not updated every year, but rather every few years when substantially new data become available.

Overall, the figures in Table 1.3 continue to reflect the HIV/AIDS epidemic in San Francisco according to our interpretation of the current data. Although numerical updated estimates for 2002 are not available, we expect that the vast majority of persons living with HIV and at high risk for HIV will continue to be men who have sex with men (MSM) and MSM who inject drugs (MSM IDU). Male-to-female transgender persons (MTF and MTF IDU) will also have high incidence and prevalence of HIV. Relatively lower, but still substantial, HIV prevalence and incidence is predicted among female and non-MSM male IDU. Finally, we expect HIV infection among heterosexual men and women, children and blood product recipients to remain relatively rare in San Francisco through 2002.

Unfortunately, recent data on sexual behavior and sexually transmitted diseases show continuing increases in risk for HIV among MSM in San Francisco. In particular, male rectal gonorrhea and primary and secondary syphilis among MSM continue to increase into 2002. The weight of evidence suggest that the projected number of new infections among MSM in 2002 will not decrease over those estimated for 2001 and may actually be higher.

**Table 1.3 Estimates of population size, HIV prevalence, and HIV incidence, 2001 HIV Consensus Meeting, San Francisco**

Population*	Estimated Size of Population at Risk (HIV- on 1/01/01)	HIV Prevalence, Estimated Number Living with HIV (HIV+ on 1/01/01)	HIV Incidence, Projected Number Acquiring HIV (1/01/01 to 12/31/01)
<b>MSM</b>	34,014	12,786	748
<b>MSM IDU</b>	1,902	2,080	87
<b>MSF IDU</b>	8,100	900	45
<b>Female IDU</b>	4,365	485	48
<b>MSF</b>	2,000	82	2
<b>FSM</b>	5,000	334	10
<b>MTF</b>	1,647	513	102
<b>MTF IDU</b>	303	537	40
<b>Children</b>	22	60	2
<b>Blood products</b>	—	61	0
<b>Total</b>	—	<b>17,838</b>	<b>1,084</b>

\* Populations are based on definitions of the HIV Prevention Planning Council.

MSM: men who report having sex with men regardless of sexual identity

MSM IDU: MSM who also report injecting drugs

MSF IDU: men who report injecting drugs but not male-male sex

Female IDU: women who report injecting drugs

MSF: presumptive heterosexual transmission to men who do not report male-male sex or injection drug use; the estimated population at risk (2,000) includes only MSF thought to have HIV+ female partners.

FSM: presumptive heterosexual transmission to women who do not report injection drug use; the estimated population at risk (5,000) includes only FSM thought to have HIV+ male partners.

MTF: male-to-female transgendered persons regardless of gender reassignment surgery or gender of their sex partners

MTF IDU: MTF who report injection drug use, excluding hormonal injection

Children: persons exposed or infected through perinatal HIV transmission, regardless of current age

Blood products: men, women, and children infected with HIV through transfusion of blood products or occupational exposure

Table 1.4 presents the estimated distribution of persons living with HIV infection as of 2001 by race/ethnicity. Estimates are based on the total estimated number of persons living with HIV as presented in Table 1.3 allocated according to the race/ethnicity of persons living with AIDS (see Section 5 "Persons living with AIDS"). The approach has the limitation of under-representing persons of color who have increasingly accounted for a higher proportion of more recent AIDS cases (see Figure 2.1). African Americans, whites, and Native Americans are relatively over-represented among persons living with HIV/AIDS compared to their make up in the population of San Francisco as a whole. Latinos living with HIV/AIDS are near their level of representation in the population as a whole. Asian/Pacific Islanders are relatively under-represented in the HIV/AIDS epidemic compared to their representation in San Francisco.

**Table 1.4** Estimated racial/ethnic distribution of persons living with HIV infection in San Francisco, 2001

Risk population	White	African American	Latino	Asian/Pacific Islander	Native American
<b>MSM</b>	9,642	1,034	1,615	452	43
<b>MSM IDU</b>	1,409	382	227	37	25
<b>MSF IDU</b>	330	430	112	19	9
<b>Female IDU</b>	153	254	51	18	9
<b>MSF</b>	29	30	21	2	—
<b>FSM</b>	107	123	64	38	2
<b>MTF</b>	127	174	136	68	8
<b>MTF IDU</b>	167	196	131	36	7
<b>Children</b>	11	23	20	4	2
<b>Blood products</b>	30	7	12	12	—
<b>Total</b>	<b>12,005</b>	<b>2,653</b>	<b>2,389</b>	<b>686</b>	<b>105</b>

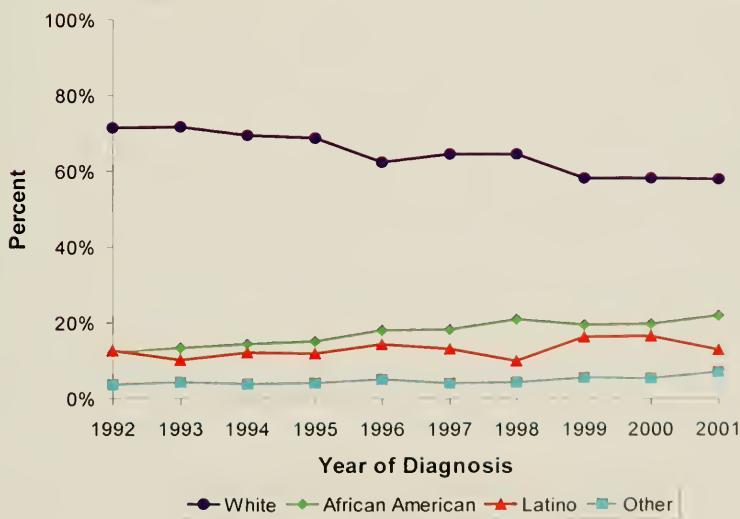
\* Apportioned according to living AIDS cases, 2001.

# Trends in AIDS Incidence

## Race/ethnicity

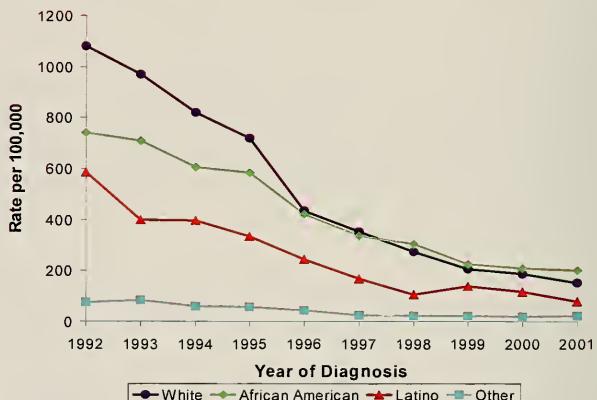
AIDS cases in San Francisco have occurred predominantly among whites. However, the proportion of AIDS cases among nonwhites, particularly African Americans, has been increasing since 1992. The proportion of AIDS cases among Latinos declined somewhat between 2000 and 2001 (Figure 2.1). Additional time is needed to assess whether or not this trend will be sustained.

Figure 2.1 Percent of AIDS cases by race/ethnicity, San Francisco, 1992-2001



The incidence rate of AIDS among men of all race/ethnic groups peaked in 1992 and has declined through 2001 (Figure 2.2). In 1998, the incidence rate of AIDS among African American men first exceeded that of white men and that difference has persisted. In 2001, the incidence rate of AIDS per 100,000 population among African American men was 202 and 152 among white men.

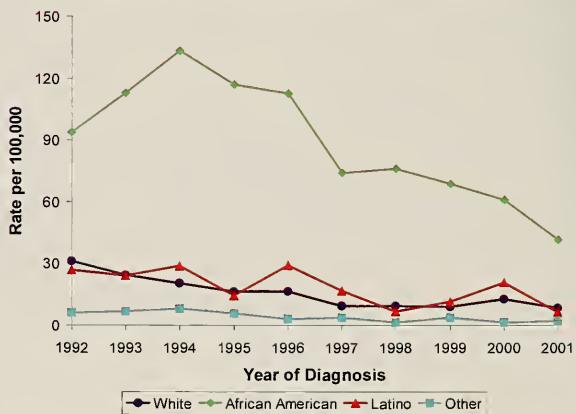
**Figure 2.2** Male annual AIDS incidence rates\* per 100,000 population by race/ethnicity, San Francisco, 1992-2001



\* Excludes 267 male-to-female transgender AIDS cases. See Technical Notes "Transgender Status" and "AIDS Incidence Rates" for rate calculations.

Among women, the incidence rate of AIDS peaked in 1994 (Figure 2.3), two years later than the peak incidence among men. Compared to other women, African American women have been disproportionately affected by AIDS throughout the AIDS epidemic. The incidence rate among African American women has declined in recent years from 76 per 100,000 in 1998 to 41 per 100,000 in 2001. However, the incidence rate of AIDS among African American women is still substantially higher than the rates among women of other races and ethnicities.

**Figure 2.3** Female annual AIDS incidence rates\* per 100,000 population by race/ethnicity, San Francisco, 1992-2001

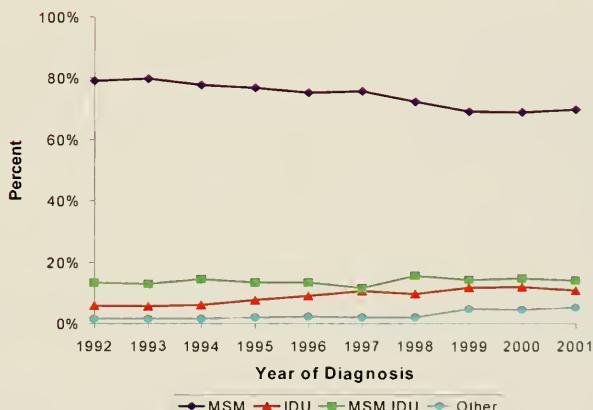


\* Excludes 6 female-to-male transgender AIDS cases. See Technical Notes "Transgender Status" and "AIDS Incidence Rates" for rate calculations.

## Exposure category

The greatest proportion of male AIDS cases has occurred among MSM (Figure 2.4). The percent of AIDS cases among MSM has been stable at approximately 70% between 1999 and 2001. MSM IDU accounted for 15% of AIDS cases in 2000 and for 14% in 2001. The proportion of male AIDS cases among heterosexual IDU has increased from 6% in 1992 to 11% in 2001.

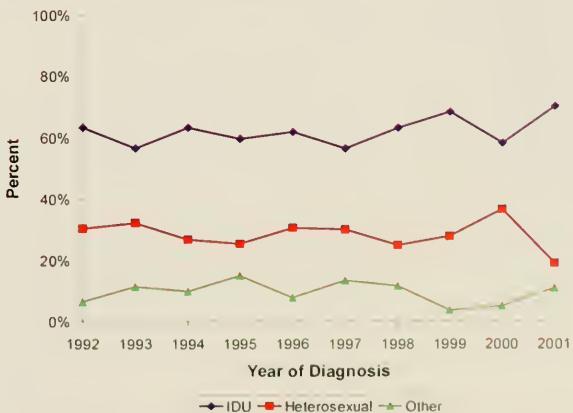
**Figure 2.4** Percent of male AIDS cases\* by exposure category, San Francisco, 1992-2001



\* Excludes 267 male-to-female transgender AIDS cases. See Technical Notes "Transgender Status."

Among women with AIDS, exposure has been attributed primarily to injection drug use followed by heterosexual transmission (Figure 2.5). Between 2000 and 2001 the percent of female AIDS cases among IDU increased from 58% to 70%. The percent of female AIDS cases acquired through heterosexual contact decreased from 37% in 2000 to 19% in 2001.

**Figure 2.5** Percent of female AIDS cases\* by exposure category, San Francisco, 1992-2001



\* Excludes 6 female-to-male transgender AIDS cases. See Technical Notes "Transgender Status."

## Age

The largest number of men and women with AIDS were diagnosed between ages 30 and 39 years (Table 2.1). AIDS has been diagnosed more frequently among younger women (aged 20-29 years) than among younger men. Although the age at diagnosis has been relatively stable, there appears to be a small increase in the percent of men and women diagnosed with AIDS in the older age group (over 40 years). This likely reflects the use of effective therapies for HIV infection, which have extended the time from acquiring HIV infection to the development of AIDS.

**Table 2.1 AIDS cases by gender\* and age at diagnosis, diagnosed 1992-2001, and cumulative totals through December 2001, San Francisco**

	1992-1995	1996-1998	1999-2001	Cumulative Totals
	Number (%)	Number (%)	Number (%)	Number (%)
<b>Male</b>				
0-19	19 (<1)	6 (<1)	8 (1)	66 (<1)
20-29	924 (11)	257 (10)	108 (8)	3,064 (12)
30-39	3,699 (45)	1,089 (43)	613 (43)	12,215 (46)
40-49	2,683 (32)	843 (33)	482 (34)	8,217 (31)
50+	938 (11)	350 (14)	212 (15)	3,016 (11)
<b>Male Subtotal</b>	<b>8,263 (100)</b>	<b>2,545 (100)</b>	<b>1,423 (100)</b>	<b>26,578 (100)</b>
<b>Female</b>				
0-19	7 (2)	8 (4)	3 (2)	37 (3)
20-29	66 (16)	30 (15)	19 (13)	160 (15)
30-39	184 (44)	75 (37)	55 (36)	429 (40)
40-49	112 (27)	70 (34)	53 (35)	304 (28)
50+	45 (11)	21 (10)	21 (14)	142 (13)
<b>Female Subtotal</b>	<b>414 (100)</b>	<b>204 (100)</b>	<b>151 (100)</b>	<b>1,072 (100)</b>

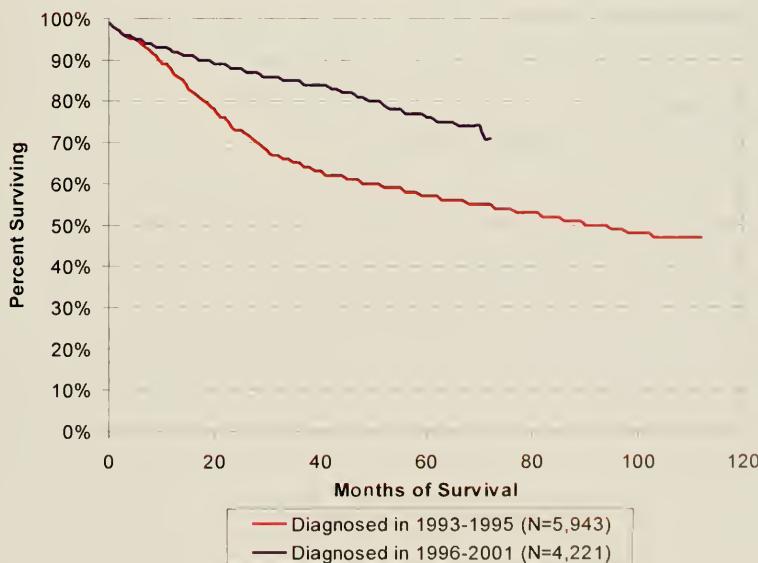
\* Excludes 273 transgender cases. We cannot analyze temporal trends in AIDS cases by transgender status. This information was first collected in September 1996. See Technical Notes "Transgender Status."

## 3

# Survival among Persons with AIDS

These Kaplan-Meier curves demonstrate the improved survival for persons diagnosed with AIDS in more recent years. Fifty-seven percent of persons who were diagnosed with AIDS between 1993 and 1995 survived 60 months. In contrast, 76% of persons who were diagnosed with AIDS between 1996 and 2001 survived 60 months. This increase in survival among persons diagnosed more recently is due to marked improvements in treatment for persons with AIDS (Figure 3.1).

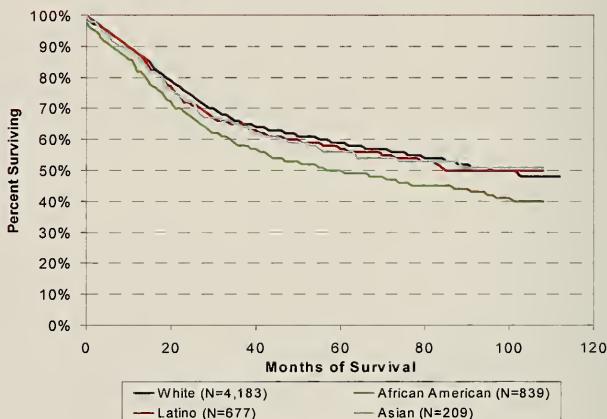
**Figure 3.1** Kaplan-Meier survival\* curves for persons diagnosed with AIDS in 1993-1995 and 1996-2001, San Francisco



\*See Technical Notes "AIDS Survival."

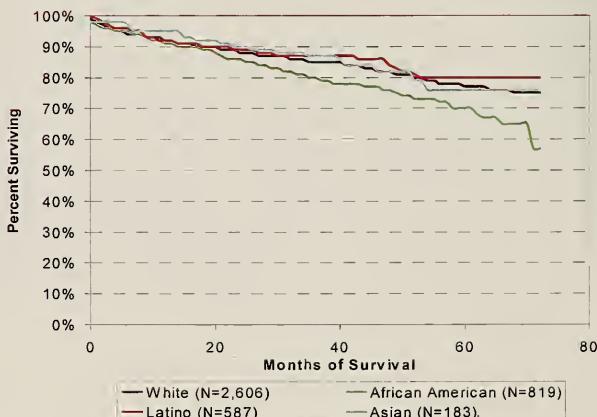
Survival after AIDS has been worse among African Americans than among persons of other races and ethnicities. Although survival has improved in recent years for all racial and ethnic groups, lower survival among African Americans has persisted. Among African Americans diagnosed with AIDS between 1993 and 1995, 50% survived 60 months while 59% of whites, 57% of Latinos and 56% of Asian/Pacific Islanders survived this long (Figure 3.2).

**Figure 3.2** Kaplan-Meier survival curves for persons diagnosed with AIDS between 1993 and 1995 by race/ethnicity, San Francisco



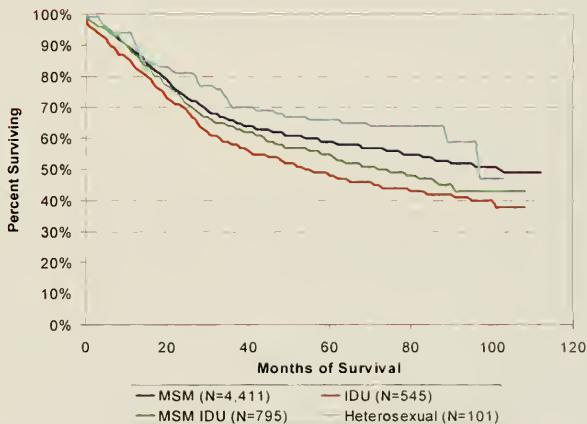
Similarly, among persons diagnosed between 1996 and 2001, the percent of African Americans surviving 60 months was 70%, while 77% of whites, 80% of Latinos, and 76% of Asians survived this long (Figure 3.3). Although the survival differences are due in part to lower usage rates of highly effective antiretroviral therapies, the reasons for these differences are not well understood.

**Figure 3.3** Kaplan-Meier survival curves for persons diagnosed with AIDS between 1996 and 2001 by race/ethnicity, San Francisco

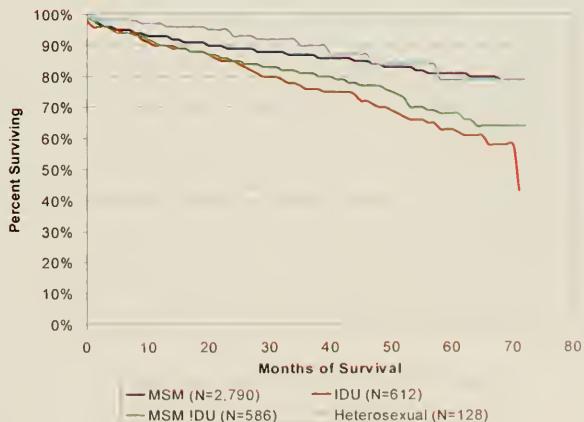


Survival has been better for MSM and for heterosexuals than for MSM IDU and for heterosexual IDU. These differences occurred among persons diagnosed between 1993 and 1995 as well as among those persons diagnosed between 1996 and 2001 (Figure 3.4 and Figure 3.5). Worse survival among IDU most likely reflects higher death rates in these groups from causes related to drug use such as overdose.

**Figure 3.4** Kaplan-Meier survival curves for persons diagnosed with AIDS between 1993 and 1995 by risk, San Francisco



**Figure 3.5** Kaplan-Meier survival curves for persons diagnosed with AIDS between 1996 and 2001 by risk, San Francisco



## 4

## Trends in AIDS Mortality

A total of 18,932 AIDS deaths have occurred in San Francisco as of December 31, 2001. The number of AIDS deaths declined between 1998 and 2001, although reporting of deaths in 2000 and 2001 is not yet complete (Table 4.1).

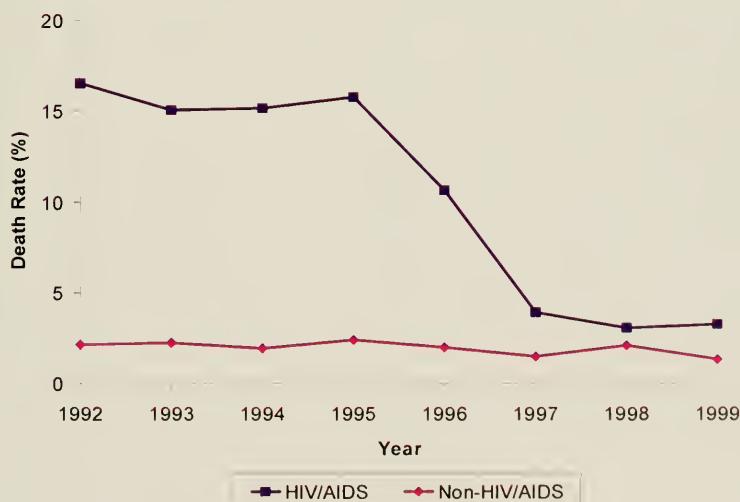
**Table 4.1 Deaths in persons with AIDS, by gender, race/ethnicity, and risk, San Francisco, 1998-2001**

Gender	Year of Death				Cumulative Totals as of 12/31/2001				
	1998		2000*						
	Number	(%)	Number	(%)					
Male	419	( 92 )	363	( 89 )	223	( 88 )	191	( 88 )	18,275
Female	26	( 6 )	39	( 10 )	22	( 9 )	15	( 7 )	531
Transgender	10	( 2 )	8	( 2 )	9	( 4 )	11	( 5 )	126
<b>Race/Ethnicity</b>									
White	315	( 69 )	259	( 63 )	159	( 63 )	151	( 70 )	14,530
African American	87	( 19 )	93	( 23 )	63	( 25 )	38	( 18 )	2,076
Latino	38	( 8 )	41	( 10 )	23	( 9 )	21	( 10 )	1,782
Other	15	( 3 )	17	( 4 )	9	( 4 )	7	( 3 )	544
<b>Risk</b>									
MSM	287	( 63 )	237	( 58 )	144	( 57 )	131	( 60 )	14,841
IDU	73	( 16 )	75	( 18 )	42	( 17 )	37	( 17 )	1,085
MSM/IDU	79	( 17 )	88	( 21 )	56	( 22 )	43	( 20 )	2,501
Heterosexual	5	( 1 )	6	( 1 )	4	( 2 )	2	( 1 )	168
Other/Unidentified	11	( 2 )	4	( 1 )	8	( 3 )	4	( 2 )	337
<b>Total</b>	<b>455</b>	<b>(100)</b>	<b>410</b>	<b>(100)</b>	<b>254</b>	<b>(100)</b>	<b>217</b>	<b>(100)</b>	<b>18,932</b>

\* Data are incomplete due to reporting delay. In addition, deaths that occurred outside of San Francisco are primarily identified through the match with the National Death Index (NDI) which is complete only through 1999.

The trend in death rates in persons with AIDS was examined by their underlying cause of death. The death rates due to HIV/AIDS-related causes plateaued between 1992 and 1995, decreased from 16 per 100 persons with AIDS in 1995 to 4 per 100 persons with AIDS in 1997, and leveled off between 1997 and 1999 (Figure 4.1). The death rates due to non-HIV/AIDS-related causes remained relatively stable between 1992 and 1999.

**Figure 4.1** Death rates\* due to HIV/AIDS-related and non-HIV/AIDS-related causes among persons with AIDS, San Francisco, 1992-1999



\* Death rates are calculated as the number of persons with AIDS who died each year divided by the number of total AIDS cases for that year. See Technical Notes for "Causes of Death."

The proportion of deaths in which HIV/AIDS was listed as an underlying cause of death decreased from 87% of AIDS deaths occurring between 1993 and 1995 to 71% in 1999 (Table 4.2). The other frequently cited underlying causes of death in 1999 include non-AIDS cancers (6.2%), drug overdose (3.7%), heart disease (3.2%), liver disease (2.5%), and suicide (2.2%). The proportions of persons with AIDS who died of these non-HIV/AIDS related conditions increased over time. Although infrequent, cardiomyopathy was listed as a cause of death in 1.5% of deaths in 1999 compared to less than 0.5% of deaths in earlier years. This may reflect an increase in deaths from HAART-related cardiomyopathy.

**Table 4.2 Underlying causes of death among persons with AIDS, San Francisco, 1993-1999**

Underlying Cause of Death*	Year of Death		
	1993-1995		1999
	N = 4,794	N = 2,000	N = 404
Underlying Cause of Death*	No. ( % )	No. ( % )	No. ( % )
HIV/AIDS	4,195 ( 87.5 )	1,522 ( 76.1 )	287 ( 71.0 )
Non-AIDS cancer			
Lung cancer	78 ( 1.6 )	77 ( 3.9 )	25 ( 6.2 )
Liver cancer	21 ( 0.4 )	18 ( 0.9 )	8 ( 2.0 )
	3 ( 0.1 )	11 ( 0.6 )	7 ( 1.7 )
Drug overdose	35 ( 0.7 )	41 ( 2.1 )	15 ( 3.7 )
Heart disease			
Coronary heart disease	53 ( 1.1 )	46 ( 2.3 )	13 ( 3.2 )
Cardiomyopathy	18 ( 0.4 )	19 ( 1.0 )	6 ( 1.5 )
	3 ( 0.1 )	5 ( 0.3 )	6 ( 1.5 )
Liver disease			
Alcoholic liver disease	42 ( 0.9 )	22 ( 1.1 )	10 ( 2.5 )
	8 ( 0.2 )	12 ( 0.6 )	5 ( 1.2 )
Suicide	44 ( 0.9 )	24 ( 1.2 )	9 ( 2.2 )
Viral hepatitis	53 ( 1.1 )	51 ( 2.6 )	7 ( 1.7 )

\* See Technical Notes "Causes of Death."

Table 4.3 summarizes multiple causes of death among persons with AIDS including both underlying and contributory causes of death. Although persons with AIDS predominantly died of HIV/AIDS-related causes, the increasing proportion of deaths due to non-HIV/AIDS-related causes suggests that certain high prevalent risk behaviors in this population are playing an important role in mortality trends. Co-infection with HIV and hepatitis viruses may be related to deaths associated with liver disease, viral hepatitis, and liver cancer. Smoking may be related to deaths associated with lung cancer, obstructive lung disease, and coronary health disease.

**Table 4.3    Multiple causes of death among persons with AIDS, San Francisco, 1993-1999**

Multiple Causes of Death*	Year of Death					
	1993-1995		1996-1998			
	N = 4,794	No. (%)	N = 2,000	No. (%)	N = 404	No. (%)
HIV/AIDS	4,589	( 95.7 )	1,812	( 90.6 )	344	( 85.1 )
Heart disease	755	( 15.7 )	326	( 16.3 )	66	( 16.3 )
Coronary heart disease	32	( 0.7 )	36	( 1.8 )	13	( 3.2 )
Cardiomyopathy	50	( 1.0 )	31	( 1.6 )	13	( 3.2 )
Liver disease	248	( 5.2 )	159	( 8.0 )	58	( 14.4 )
Alcoholic liver disease	16	( 0.3 )	18	( 0.9 )	6	( 1.5 )
Pneumonia	793	( 16.5 )	288	( 14.4 )	54	( 13.4 )
Viral hepatitis	95	( 2.0 )	94	( 4.7 )	43	( 10.6 )
Non-AIDS cancer	287	( 6.0 )	155	( 7.8 )	41	( 10.1 )
Lung cancer	22	( 0.5 )	22	( 1.1 )	10	( 2.5 )
Liver cancer	4	( 0.1 )	13	( 0.7 )	8	( 2.0 )
Septicemia	301	( 6.3 )	151	( 7.6 )	29	( 7.2 )
Drug overdose	40	( 0.8 )	50	( 2.5 )	18	( 4.5 )
Chronic obstructive lung disease	53	( 1.1 )	39	( 2.0 )	11	( 2.7 )
Suicide	44	( 0.9 )	24	( 1.2 )	9	( 2.2 )
Aspergillosis	73	( 1.5 )	50	( 2.5 )	8	( 2.0 )
Pancreatitis	32	( 0.7 )	22	( 1.1 )	4	( 1.0 )

\* Includes underlying and contributory causes of death. Individuals may have more than one cause of death. See Technical Notes "Causes of Death".

# Persons Living with AIDS

Although the annual number of new AIDS cases has decreased since 1992, the ongoing incidence of AIDS, coupled with the increase in survival after AIDS has resulted in an increasing number of persons living with AIDS in San Francisco. As of December 31, 2001, there were 8,991 persons living with AIDS in San Francisco. The demographic and risk group characteristics of persons living with AIDS have remained relatively stable between 1998 and 2001; the majority is male, white, aged 40-49 years, and MSM (including MSM IDU) (Table 5.1). The percent of persons living with AIDS who are 40 years or older has increased over time, suggesting the use of treatments for HIV infection has delayed the age at AIDS diagnosis and prolonged the survival of AIDS.

**Table 5.1 Persons living with AIDS by demographic and risk characteristics, San Francisco, 1998-2001<sup>#</sup>**

	1998 Number (%)	1999 Number (%)	2000 Number (%)	2001 Number (%)
<b>Gender</b>				
Male	7,657 ( 93 )	7,830 ( 93 )	8,093 ( 92 )	8,303 ( 92 )
Female	466 ( 6 )	481 ( 6 )	519 ( 6 )	541 ( 6 )
Transgender	131 ( 2 )	141 ( 2 )	146 ( 2 )	147 ( 2 )
<b>Race/Ethnicity</b>				
White	5,713 ( 69 )	5,809 ( 69 )	5,976 ( 68 )	6,086 ( 68 )
African American	1,193 ( 14 )	1,219 ( 14 )	1,267 ( 14 )	1,328 ( 15 )
Latino	1,011 ( 12 )	1,070 ( 13 )	1,140 ( 13 )	1,177 ( 13 )
Asian/Pacific Islander	292 ( 4 )	305 ( 4 )	324 ( 4 )	347 ( 4 )
Native American	45 ( 1 )	49 ( 1 )	51 ( 1 )	53 ( 1 )
<b>Age (at end of each year)</b>				
0 - 19	28 ( <1 )	30 ( <1 )	32 ( <1 )	32 ( <1 )
20 - 29	317 ( 4 )	263 ( 3 )	220 ( 3 )	194 ( 2 )
30 - 39	2,838 ( 34 )	2,684 ( 32 )	2,578 ( 29 )	2,323 ( 26 )
40 - 49	3,405 ( 41 )	3,585 ( 42 )	3,745 ( 43 )	3,964 ( 44 )
50+	1,666 ( 20 )	1,890 ( 22 )	2,183 ( 25 )	2,478 ( 28 )
<b>Exposure Category</b>				
<b>Male</b>				
MSM	6,079 ( 78 )	6,223 ( 78 )	6,419 ( 78 )	6,574 ( 78 )
IDU	490 ( 6 )	510 ( 6 )	543 ( 7 )	563 ( 7 )
MSM IDU	1,091 ( 14 )	1,088 ( 14 )	1,110 ( 13 )	1,129 ( 13 )
Heterosexual	28 ( <1 )	36 ( <1 )	42 ( 1 )	48 ( 1 )
Other/Unidentified	98 ( 1 )	110 ( 1 )	120 ( 1 )	131 ( 2 )
<b>Subtotal</b>	<b>7,784</b>	<b>7,967</b>	<b>8,234</b>	<b>8,445</b>
<b>Female</b>				
IDU	281 ( 60 )	286 ( 59 )	306 ( 58 )	319 ( 58 )
Heterosexual	139 ( 30 )	148 ( 31 )	166 ( 32 )	171 ( 31 )
Other/Unidentified	50 ( 11 )	51 ( 11 )	52 ( 10 )	56 ( 10 )
<b>Subtotal</b>	<b>470</b>	<b>485</b>	<b>524</b>	<b>546</b>
<b>Total</b>	<b>8,254</b>	<b>8,452</b>	<b>8,758</b>	<b>8,991</b>

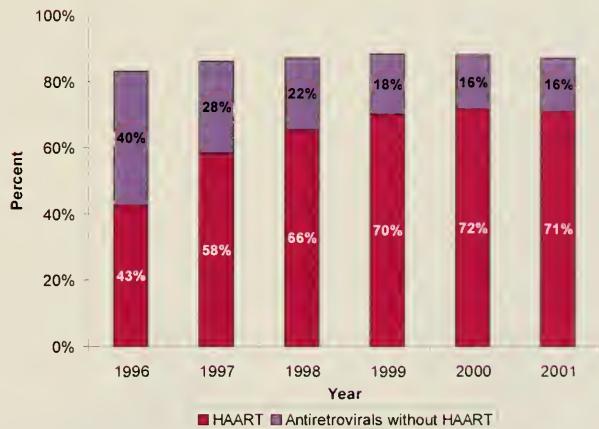
# Persons living with AIDS at the end of each year.

## 6

# Use of HAART among Persons Living with AIDS

The majority of persons with AIDS in San Francisco have received antiretroviral therapy and the proportion of persons with AIDS on therapy has been increasing since 1996. Between 1996 and 2001, the use of highly active antiretroviral therapy (HAART) increased substantially (Figure 6.1). By the end of 2001, 87% of persons living with AIDS had received some type of antiretroviral therapy and 71% were noted to have received HAART.

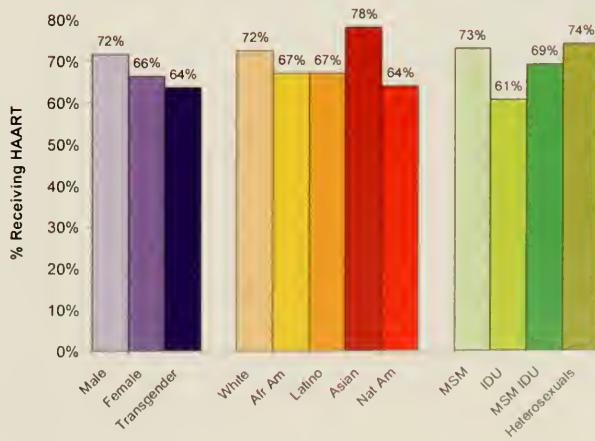
**Figure 6.1** Use of HIV antiretrovirals\* and HAART among persons living with AIDS, San Francisco, 1996-2001



\* See Technical Notes "Treatments."

A greater percent of men were noted to have used HAART than women or transgender persons (Figure 6.2). HAART use was noted among 78% of Asians/Pacific Islanders with AIDS and among 72% of whites with AIDS. Use of HAART was observed among a smaller percent of African Americans, Latinos, and Native Americans with AIDS. HAART use was more common among MSM and heterosexuals with AIDS than among heterosexual and homosexual injection drug users.

**Figure 6.2** Use of HAART among persons living with AIDS by gender, race/ethnicity, and risk, San Francisco, December 2001

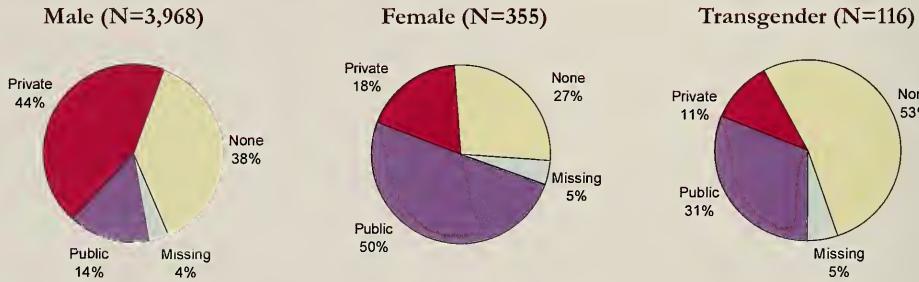


## 7

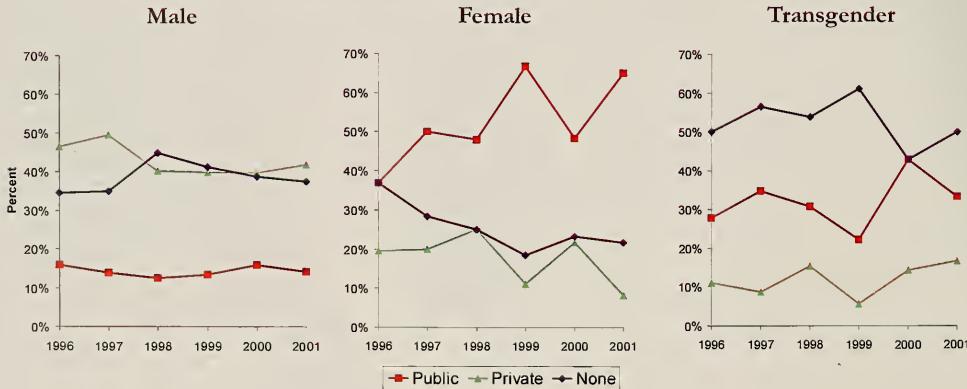
# Insurance Status at Time of AIDS Diagnosis

Insurance status at the time of AIDS diagnosis differs by gender. Although a greater proportion of men than women who were diagnosed with AIDS between 1996 and 2001 were uninsured at the time of diagnosis, only 18% of women had private insurance while 44% of men had private insurance at the time of AIDS diagnosis (Figure 7.1). More than half of transgender persons with AIDS did not have health insurance at the time of diagnosis. The proportion of men and transgenders without health insurance at the time of AIDS diagnosis has decreased slightly in recent years while this proportion has been relatively stable among women (Figure 7.2). Thirty-seven percent of persons diagnosed with AIDS in 2001 did not have health insurance at the time of diagnosis.

**Figure 7.1 AIDS cases by gender and insurance status at diagnosis, San Francisco, 1996-2001**



**Figure 7.2 Trends in insurance status among persons with AIDS by gender, San Francisco, 1996-2001**



# AIDS Opportunistic Illnesses

The number of AIDS opportunistic illnesses (OIs) diagnosed each year has declined substantially between 1997 and 2001 (Table 8.1). There was a notable decrease in the proportion of cytomegalovirus infection (CMV) and CMV retinitis. The decrease in CMV was most likely due to immune reconstitution with protease inhibitors. Between 1997 and 2000, there was a decrease in *Mycobacterium avium* complex (MAC) diagnoses which likely reflected immune reconstitution and wider use of MAC prophylaxis. However, an increase in MAC diagnoses was observed in 2001 for reasons that are not yet clear. Despite their lower numbers, *Pneumocystis carinii* pneumonia, wasting syndrome and Kaposi's sarcoma remain the most frequently diagnosed OI in this time period.

**Table 8.1 Number of AIDS opportunistic illnesses\* diagnosed between 1997 and 2001, San Francisco**

AIDS Indicator Condition	1997 Number (%)	1998 Number (%)	1999 Number (%)	2000 Number (%)	2001 Number (%)
Candidiasis, bronchi, trachea, or lungs	2 ( 0.2 )	3 ( 0.3 )	9 ( 1.2 )	0 ( 0.0 )	2 ( 0.5 )
Candidiasis, esophageal	84 ( 7.3 )	60 ( 6.8 )	59 ( 7.6 )	73 ( 10.6 )	24 ( 5.7 )
Cervical cancer	1 ( 0.1 )	0 ( 0.0 )	1 ( 0.1 )	1 ( 0.1 )	0 ( 0.0 )
Coccidioidomycosis, disseminated or extrapulmonary	1 ( 0.1 )	2 ( 0.2 )	2 ( 0.3 )	1 ( 0.1 )	1 ( 0.2 )
Cryptococcosis, extrapulmonary	58 ( 5.0 )	43 ( 4.9 )	34 ( 4.4 )	25 ( 3.6 )	37 ( 8.8 )
Cryptosporidiosis, chronic intestinal	40 ( 3.5 )	34 ( 3.8 )	33 ( 4.3 )	19 ( 2.8 )	13 ( 3.1 )
Cytomegalovirus disease (CMV)	70 ( 6.1 )	25 ( 2.8 )	28 ( 3.6 )	18 ( 2.6 )	11 ( 2.6 )
Cytomegalovirus retinitis	40 ( 3.5 )	47 ( 5.3 )	34 ( 4.4 )	26 ( 3.8 )	9 ( 2.1 )
HIV encephalopathy	62 ( 5.4 )	66 ( 7.5 )	60 ( 7.8 )	43 ( 6.2 )	18 ( 4.3 )
Herpes simplex	10 ( 0.9 )	10 ( 1.1 )	5 ( 0.6 )	7 ( 1.0 )	0 ( 0.0 )
Histoplasmosis, disseminated or extrapulmonary	4 ( 0.3 )	3 ( 0.3 )	1 ( 0.1 )	3 ( 0.4 )	1 ( 0.2 )
Isosporiasis, chronic intestinal	2 ( 0.2 )	1 ( 0.1 )	2 ( 0.3 )	1 ( 0.1 )	1 ( 0.2 )
Kaposi's sarcoma	128 ( 11.1 )	70 ( 7.9 )	63 ( 8.2 )	62 ( 9.0 )	39 ( 9.3 )
Lymphoma, Burkitt's	14 ( 1.2 )	16 ( 1.8 )	7 ( 0.9 )	10 ( 1.4 )	5 ( 1.2 )
Lymphoma, immunoblastic	50 ( 4.3 )	24 ( 2.7 )	22 ( 2.8 )	27 ( 3.9 )	17 ( 4.0 )
Lymphoma, primary in brain	15 ( 1.3 )	5 ( 0.6 )	5 ( 0.6 )	6 ( 0.9 )	3 ( 0.7 )
Mycobacterium avium complex (MAC)	81 ( 7.0 )	58 ( 6.6 )	50 ( 6.5 )	37 ( 5.4 )	37 ( 8.8 )
Mycobacterium tuberculosis, disseminated or extrapulmonary	6 ( 0.5 )	8 ( 0.9 )	6 ( 0.8 )	4 ( 0.6 )	3 ( 0.7 )
Mycobacterium tuberculosis, pulmonary	14 ( 1.2 )	28 ( 3.2 )	28 ( 3.6 )	10 ( 1.4 )	10 ( 2.4 )
Mycobacterium, other species	5 ( 0.4 )	1 ( 0.1 )	7 ( 0.9 )	5 ( 0.7 )	2 ( 0.5 )
Pneumocystis carinii pneumonia (PCP)	209 ( 18.1 )	181 ( 20.5 )	144 ( 18.6 )	143 ( 20.7 )	112 ( 26.6 )
Pneumonia, recurrent	80 ( 6.9 )	53 ( 6.0 )	52 ( 6.7 )	40 ( 5.8 )	19 ( 4.5 )
Progressive multifocal leukoencephalopathy	8 ( 0.7 )	7 ( 0.8 )	6 ( 0.8 )	5 ( 0.7 )	2 ( 0.5 )
Salmonella sepsis, recurrent	1 ( 0.1 )	0 ( 0.0 )	0 ( 0.0 )	0 ( 0.0 )	0 ( 0.0 )
Toxoplasmosis of brain	16 ( 1.4 )	11 ( 1.2 )	10 ( 1.3 )	9 ( 1.3 )	5 ( 1.2 )
Wasting syndrome	152 ( 13.2 )	129 ( 14.6 )	105 ( 13.6 )	115 ( 16.7 )	50 ( 11.9 )
<b>Total</b>	<b>1,153 ( 100 )</b>	<b>885 ( 100 )</b>	<b>773 ( 100 )</b>	<b>690 ( 100 )</b>	<b>421 ( 100 )</b>

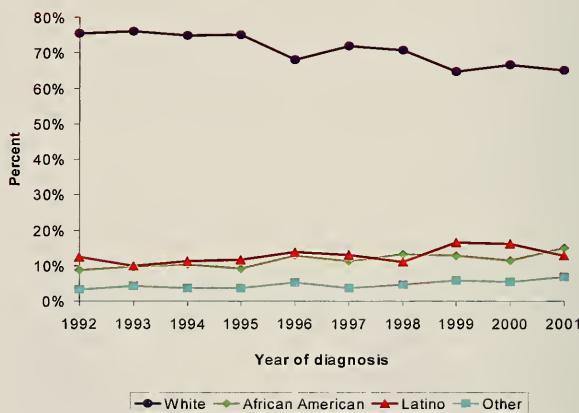
\* A person may have more than one opportunistic illness diagnosed during the same or different year. Data are provisional for opportunistic illnesses diagnosed in recent years.

# HIV/AIDS among Men Who Have Sex with Men

## AIDS surveillance data

The majority of San Francisco AIDS cases have occurred among white MSM. Between 1992 and 2001, the proportion of AIDS cases among MSM who are white has declined slightly while the proportion of non-white MSM AIDS cases has increased (Figure 9.1).

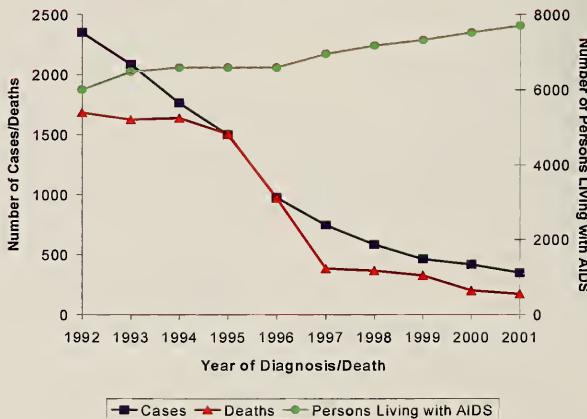
Figure 9.1 Percent of AIDS cases among MSM\* by race/ethnicity, San Francisco, 1992-2001



\* Includes MSM and MSM-IDU.

While the number of new AIDS cases and AIDS deaths among MSM has declined markedly since 1992, the number of MSM living with AIDS continues to increase. This is due in part to improved treatment for persons with AIDS. In 2001, there were 7,705 MSM living with AIDS who had been diagnosed in San Francisco (Figure 9.2).

Figure 9.2 AIDS cases, deaths, and prevalence among MSM\*, San Francisco, 1992-2001



\* Includes MSM and MSM-IDU.

## HIV prevalence and incidence data

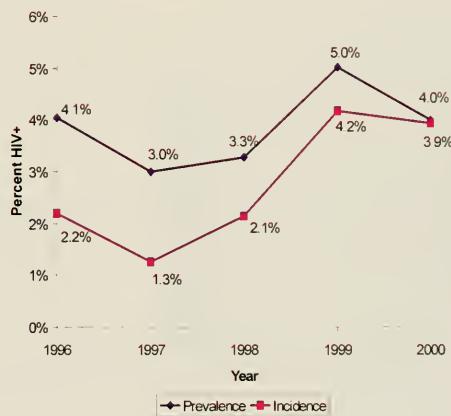
### Anonymous Counseling and Testing Data

Data originate from persons seeking voluntary HIV counseling and testing at anonymous sites in San Francisco. The data may therefore not be representative of the wider MSM community as a whole. HIV prevalence is measured as the number of MSM testing HIV antibody positive divided by the total number of MSM testing and presented as the percent *living with HIV* each year. HIV incidence is estimated using STARHS (see Technical Notes) and is presented as percent *acquiring HIV* per year.

In general, there has been an increase in HIV prevalence and incidence among MSM seeking anonymous HIV testing in recent years (Figure 9.3). This increase is corroborated by recent rises in sexual risk behavior and sexually transmitted diseases in the city. Data from 2000 (available for January to September only) suggest that HIV incidence may have leveled off from that observed in 1999. However, the estimate, 3.9% per year, is still statistically significantly higher than 1996 to 1998. Findings remain to be confirmed with complete data for 2000 and 2001.

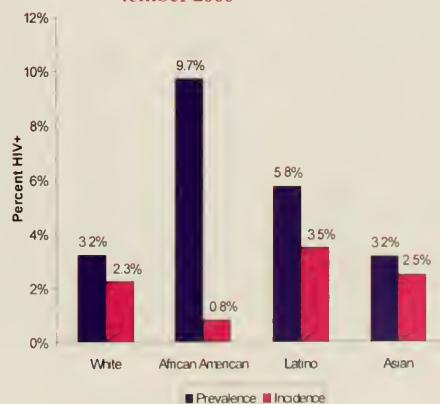
Figure 9.4 shows HIV incidence and prevalence among persons anonymously tested for HIV by race/ethnicity. African American MSM had the highest prevalence of HIV (9.7%) but the lowest HIV incidence (0.8% per year). The findings may reflect African American MSM seeking HIV testing later after infection compared to other groups. HIV incidence was highest among Latino MSM (3.5% per year) and moderately high among whites (2.3% per year) and Asian/Pacific Islanders (2.5% per year).

**Figure 9.3** HIV prevalence and incidence among MSM\* at anonymous testing sites, San Francisco, 1996-September 2000



\* Includes MSM and MSM-IDU.

**Figure 9.4** HIV prevalence and incidence among MSM\* at anonymous testing sites by race/ethnicity, San Francisco, 1996-September 2000



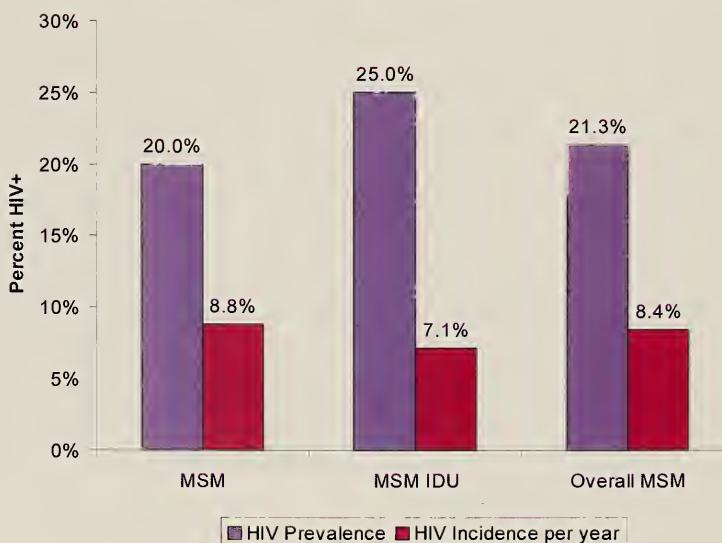
\* Includes MSM and MSM-IDU.

### *The County Jail Survey*

A blinded, unlinked HIV prevalence and incidence survey was conducted among persons upon intake in the central county jail from June 1999 to July 2001. Male participants were aged 18-35 years who agreed to sexually transmitted disease screening and treatment. Conventional and STARHS testing for HIV were conducted on residual sera from syphilis screening after specimens and records were permanently stripped of identifying information. The stigma associated with male-male sexual behavior in jail may result in under-counting of MSM in these data.

Overall HIV prevalence among MSM in jail was 21.3% with a slightly higher prevalence (25.0%) among MSM who inject drugs (MSM IDU) (Figure 9.5). HIV incidence among MSM was high, 8.4% per year overall, regardless of reporting injection drug use or not.

**Figure 9.5 HIV prevalence and incidence among MSM in the county jail, San Francisco, June 1999- July 2001**



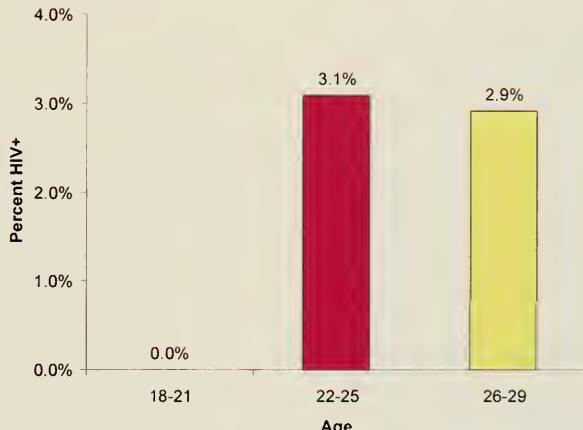
### The Asian Counseling and Testing Survey

In 2000 and 2001, a survey of approximately 500 Asian/Pacific Islander (API) MSM aged 18 to 29 years was conducted by recruiting persons at randomly-selected community venues (gay-identified, bars, gyms, bookstores, etc.) and on streets in gay neighborhoods at randomly selected time periods. The survey is the largest of its kind conducted in the US to date.

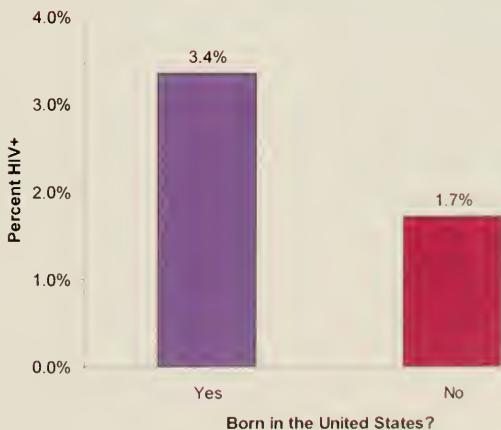
HIV prevalence was 3.1% among API MSM age 22 to 25 years and 2.9% among API MSM age 26 to 29 years (Figure 9.6). No HIV infection was detected in the youngest group of API MSM, age 18 to 21 years.

Figure 9.7 suggests that API MSM born in the US have a higher prevalence of HIV compared to those born outside the US.

**Figure 9.6** HIV prevalence among the Asian Counseling and Testing Study participants by age, San Francisco, 2001



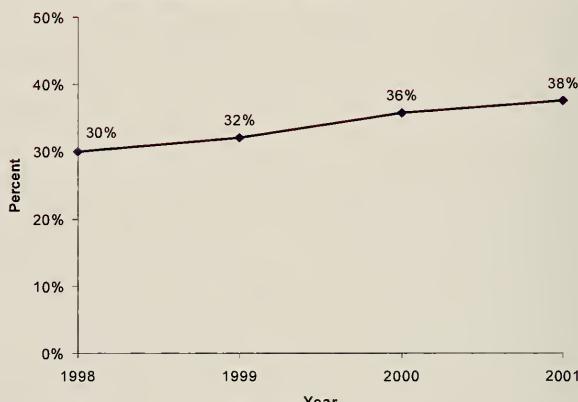
**Figure 9.7** HIV prevalence among the Asian Counseling and Testing Study participants by birthplace, San Francisco, 2001



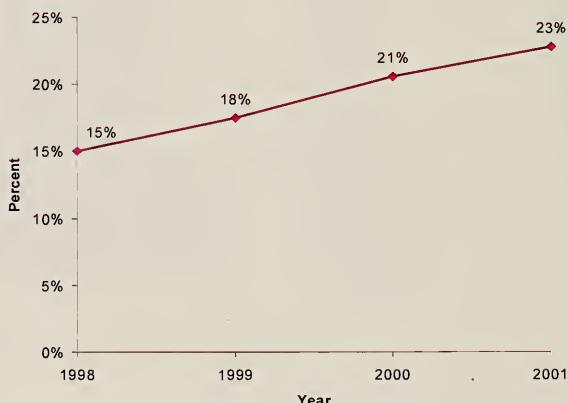
## Sexual risk behavior data

Trends in sexual risk behavior are tracked through data collected by the Stop AIDS Project, a community-based organization providing HIV prevention education to MSM. Two indicators of sexual risk behavior among MSM are presented: the percent of respondents reporting unprotected anal sex in the last six months (Figure 9.8) and the percent of respondents reporting unprotected anal sex with multiple partners; that is, two or more partners in the last six months (Figure 9.9). As illustrated, both measures of risk for HIV have increased from 1998 to 2001. (Of note, figures differ from those presented in the 2000 Annual Report because the denominator includes all respondents; data presented in the 2000 Annual Report included only first time survey respondents and only persons who reported any anal sex. Overall trends remain consistently upward regardless of sub-analysis.)

**Figure 9.8** Percent of MSM reporting unprotected anal intercourse in the last six months, the Stop AIDS Project, San Francisco, 1998-2001



**Figure 9.9** Percent of MSM reporting unprotected anal intercourse with multiple partners in the last six months, the Stop AIDS Project, San Francisco, 1998-2001



## Viagra study

Because incidence of sexually transmitted diseases (STD) and HIV has been on the rise in San Francisco in recent years, we considered whether prescribed and recreational use of Viagra (Sildenafil) may be a factor contributing to increases in risky sexual behavior. The San Francisco Department of Public Health, in collaboration with the STOP AIDS Project, conducted a study to examine Viagra use among MSM, the potential contribution of Viagra to the risk of HIV transmission, and the extent to which Viagra is used in combination with prescription medications and illicit drugs. The study was a cross-sectional survey of self-identified MSM aged 18 years or older sampled consecutively from gay-identified venues and neighborhoods in San Francisco during outreach prevention activities.

Of 886 men interviewed, the mean age was 35 years, 66% were white, and 65% had a college degree (Table 9.1). The majority (75%) had anal sex in the last six months, with less than half (49%) reporting always using condoms. Overall, 32% reported ever using Viagra, 57% among self-reported HIV-positive men and 30% among HIV-negative men. Viagra users were more likely to be HIV+, have more sex partners, and have used ketamine.

Viagra use in this large sample of community-recruited MSM was high overall and associated with high risk sexual behavior and recreational drug use. Viagra use may be a contributing factor in STD and HIV transmission among MSM in San Francisco.

**Table 9.1 Viagra use among MSM, the Stop AIDS Project, San Francisco, 2001**

	No.	( % )	Percent Ever Used Viagra
<b>Total</b>	886	( 100 )	32%
<b>Race/Ethnicity</b>			
White	562	( 66 )	36%
African American	36	( 4 )	19%
Latino	91	( 11 )	20%
Asian	76	( 9 )	20%
Other	81	( 10 )	35%
<b>Age</b>			
18-29	274	( 33 )	22%
30-39	301	( 36 )	32%
40-49	164	( 20 )	44%
50 and over	98	( 12 )	44%
<b>Education</b>			
Less than high school	32	( 4 )	28%
High school, some college	254	( 31 )	33%
College degree and above	546	( 65 )	32%
<b>Anal Sex (past 6 months)</b>	640	( 75 )	36%
<b>Condom Use</b>			
Always	313	( 49 )	31%
Not always	322	( 51 )	40%
<b>Number of Sex Partners</b>			
0	32	( 4 )	19%
1 to 3	353	( 44 )	24%
4 to 9	171	( 21 )	30%
10+	249	( 31 )	50%
<b>HIV Status</b>			
HIV positive	105	( 14 )	57%
HIV negative	661	( 86 )	30%
<b>Illicit Drug Use</b>			
Yes	588	( 70 )	38%
No	258	( 30 )	20%

# HIV/AIDS among Injection Drug Users

## AIDS surveillance data

Injection drug use by non-MSM comprises the third most frequent exposure group for persons with AIDS in San Francisco, after MSM and MSM IDU. The number of new AIDS cases among non-MSM IDU peaked in 1992 with 209 cases diagnosed that year (Figure 10.1). The number of deaths in this group plateaued between 1993 and 1996 and declined substantially in 1997 and more modestly thereafter. The number of non-MSM IDU living with AIDS has increased steadily and as of December 31, 2001 there were 859 non-MSM IDU living with AIDS in San Francisco.

African Americans account for the greatest number of non-MSM IDU AIDS cases (Figure 10.2). The number of new AIDS cases among African American non-MSM IDU plateaued between 1992 and 1995 and has declined since.

Figure 10.1 AIDS cases, deaths, and prevalence among heterosexual IDU, San Francisco, 1992-2001

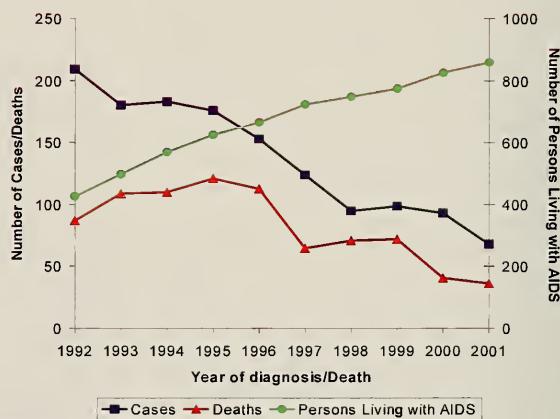
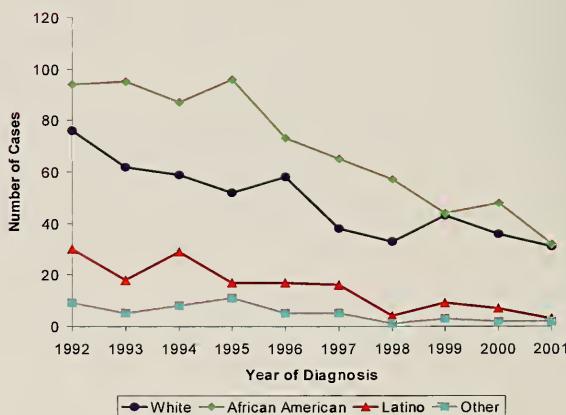


Figure 10.2 AIDS cases among heterosexual IDU by race/ethnicity, San Francisco, 1992-2001



MSM IDU account for the majority (63%) of IDU-associated AIDS cases followed by male heterosexual IDU who comprise 23% of IDU-associated AIDS cases (Table 10.1). Of the MSM IDU cases, 72% are white and 16% African American. This differs markedly from the heterosexual male and female IDU AIDS cases in which 49% and 53% respectively, are African American.

**Table 10.1** **Injection drug use-associated AIDS cases by exposure category and race/ethnicity, diagnosed through December 2001, San Francisco**

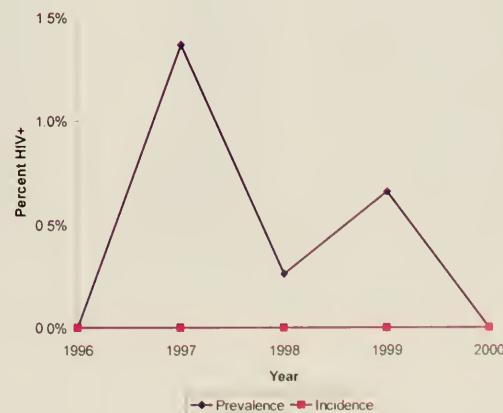
Exposure Category	Number	Race/Ethnicity Distribution by Percent				
		White	African American	Latino	Asian	Native American
Male heterosexual IDU	1,341	36%	49%	13%	1%	1%
Female heterosexual IDU	582	32%	53%	9%	3%	2%
MSM IDU	3,630	72%	16%	9%	2%	1%
Lesbian IDU	44	48%	32%	14%	5%	2%
Heterosexual contact with IDU	159	35%	45%	13%	7%	0%
Children whose mothers are IDUs or sex partners of IDUs	30	17%	53%	17%	10%	3%

## HIV prevalence and incidence data

### Anonymous Counseling and Testing Data

Data originate from persons seeking voluntary HIV counseling and testing at anonymous sites in San Francisco. The data may therefore not be representative of IDU who do not seek HIV testing. HIV prevalence is measured as the number of IDU testing HIV antibody positive divided by the total number of IDU testing and presented as the percent *living with* HIV each year. Between 1996 and 2000, HIV prevalence among IDU (those who are not men who have sex with men) has varied but remained under 1.5% (Figure 10.3). HIV incidence is estimated using STARHS (see Technical Notes) and is presented as percent *acquiring* HIV per year. HIV incidence has been 0% per year from 1996 to 2000; that is, no recent HIV infections have been detected among non-MSM IDU seeking anonymous HIV testing.

**Figure 10.3** **HIV prevalence and incidence among non-MSM IDU at anonymous testing sites, San Francisco, 1996-September 2000**

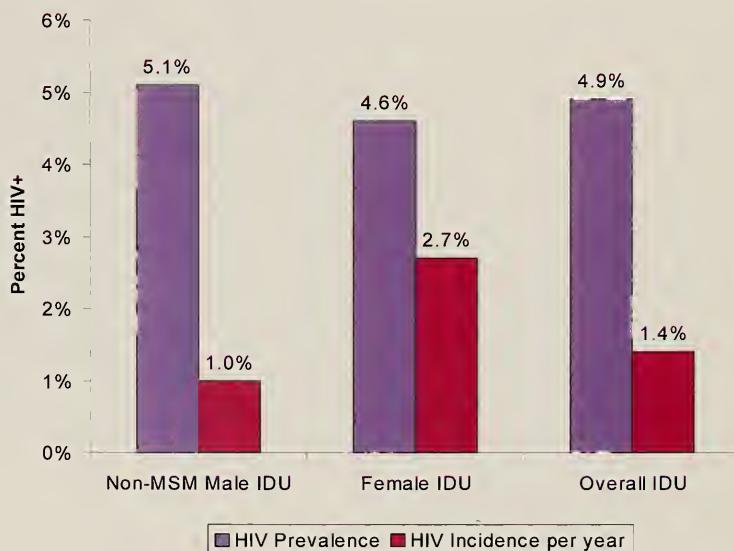


### ***The County Jail Survey***

A blinded, unlinked HIV prevalence and incidence survey was conducted among persons upon intake in the central county jail from June 1999 to July 2001. Participants were persons who agreed to sexually transmitted disease screening and treatment. Males were age 18 to 35 years; females were 18 to 45. Conventional and STARHS testing for HIV were conducted on residual sera from syphilis screening after specimens and records were permanently stripped of identifying information. The illicit nature of injection drug use may result in under-counting of IDU in these data.

HIV prevalence was 4.6% among female IDU and 5.1% among non-MSM male IDU in jail (Figure 10.4). HIV incidence was high among female IDU (2.7% per year) and moderate among male IDU (1.0% per year).

**Figure 10.4 HIV prevalence and incidence among non-MSM IDU in the county jail, San Francisco, June 1999-July 2001**



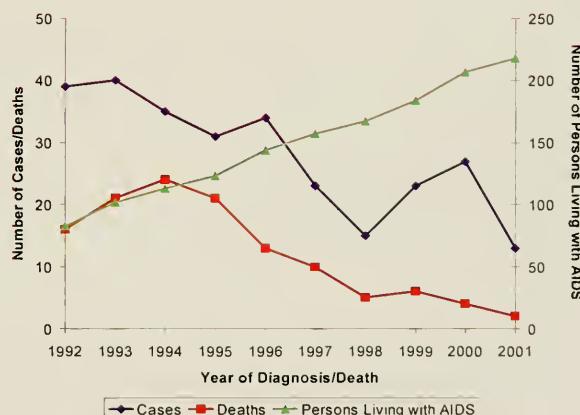
## 11

# HIV/AIDS among Heterosexuals

## AIDS surveillance data

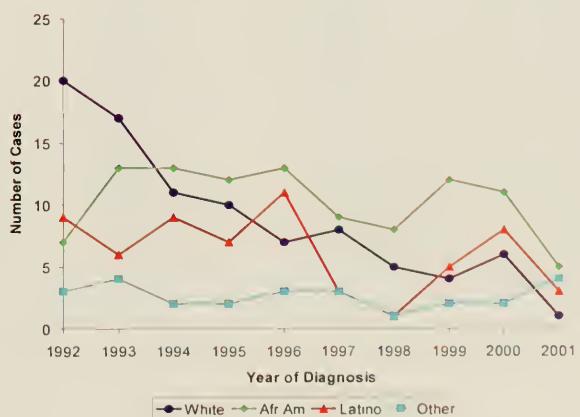
The number of AIDS cases among persons who acquired HIV infection through heterosexual contact is small relative to other risk groups. The number of new AIDS cases in this group peaked in 1993, later than other risk groups, with 40 cases diagnosed that year (Figure 11.1). The number of deaths among heterosexual non-IDU peaked in 1994 with 24 deaths occurring that year. The number of heterosexual non-IDU living with AIDS has increased steadily to a total of 218 by December 31, 2001.

Figure 11.1 AIDS cases, deaths, and prevalence among heterosexuals, San Francisco, 1992-2001



The number of new heterosexual contact AIDS cases among whites peaked in 1992 and declined thereafter (Figure 11.2). Among African American heterosexual non-IDU AIDS cases, the number of new cases plateaued between 1993 and 1996 and fluctuated in the following years with a notable decline between 2000 and 2001. In 1994, the number of new AIDS cases among African American heterosexual non-IDU exceeded the number among whites. Although small relative to other risk groups, the number of new AIDS cases among heterosexual non-IDU remains highest among African Americans.

Figure 11.2 AIDS cases among heterosexuals by race/ethnicity, San Francisco, 1992-2001



The majority of heterosexually acquired AIDS cases are women (Table 11.1). Of the 296 women in this group, 124 (42%) reported sex with an IDU. Among the 90 men in this risk group, 35 (39%) reported an IDU partner. Fifty-six percent of men and 37% of women reported sex with an HIV infected partner of unknown risk.

**Table 11.1 Heterosexually transmitted AIDS cases by exposure category and gender, diagnosed through December 2001, San Francisco**

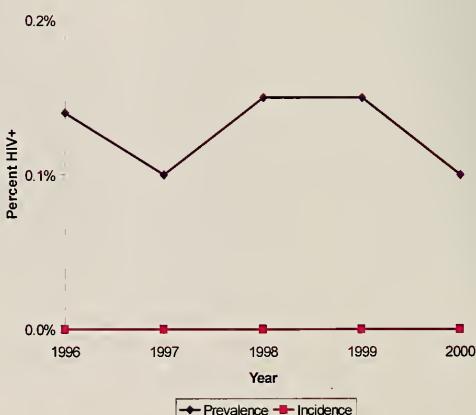
Exposure Category	Men		Women	
	Number	%	Number	%
Sex with injection drug user	35	39%	124	42%
Sex with bisexual men	0	0%	54	18%
Sex with persons with hemophilia	0	0%	3	1%
Sex with transfusion recipient with HIV+	5	6%	5	2%
Sex with HIV+ person of unknown risk	50	56%	110	37%
<b>Total</b>	<b>90</b>	<b>100%</b>	<b>296</b>	<b>100%</b>

## HIV prevalence and incidence data

### Anonymous Counseling and Testing Data

Data originate from persons seeking voluntary HIV counseling and testing at anonymous sites in San Francisco. The data may therefore not be representative of persons who do not seek HIV testing. HIV prevalence is measured as the number of persons testing HIV antibody positive divided by the total number of persons testing and presented as the percent *living with HIV* each year. Between 1996 and 2000, HIV prevalence among non drug injecting heterosexuals has been low and stable, less than 2 per 1000 (Figure 11.3). HIV incidence is estimated using STARHS (see Technical Notes) and is presented as percent *acquiring HIV* per year. HIV incidence has been 0% per year from 1996 to 2000; that is, no recent HIV infections have been detected among heterosexuals seeking anonymous HIV testing.

**Figure 11.3 HIV prevalence and incidence among heterosexuals at anonymous testing sites, San Francisco, 1996-September 2000**

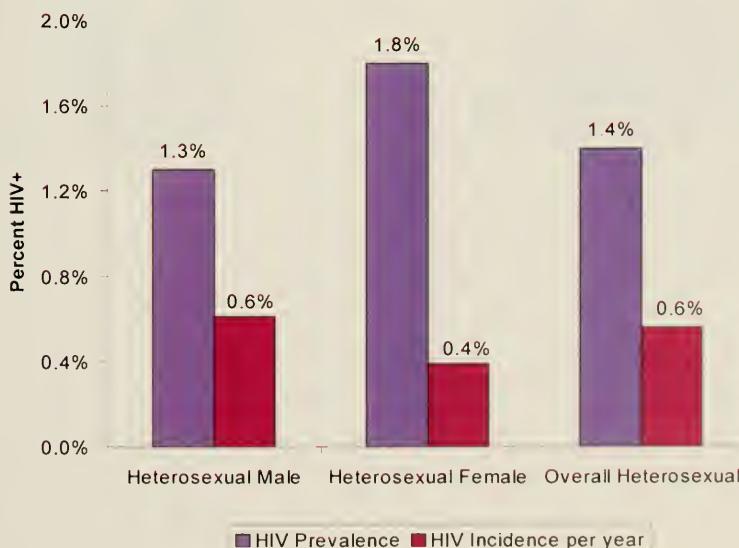


### ***The County Jail Survey***

A blinded, unlinked HIV prevalence and incidence survey was conducted among persons upon intake in the central county jail from June 1999 to July 2001. Participants were persons who agreed to sexually transmitted disease screening and treatment. Males were age 18 to 35 years; females were 18 to 45. Conventional and STARHS testing for HIV were conducted on residual sera from syphilis screening after specimens and records were permanently stripped of identifying information. The stigma of male-male sexual behavior and the illicit nature of injection drug use may result in many MSM and IDU being misclassified in these data as heterosexuals, therefore overestimating the level of HIV in the heterosexual, non-IDU jail population.

HIV prevalence was 1.8% among non-IDU females and 1.3% among heterosexual, non-IDU males in jail (Figure 11.4). HIV incidence was low for heterosexual females and males - 4 per 1000 per year and 6 per 1000 per year, respectively.

**Figure 11.4 HIV prevalence and incidence among heterosexuals in the county jail, San Francisco, June 1999- July 2001**

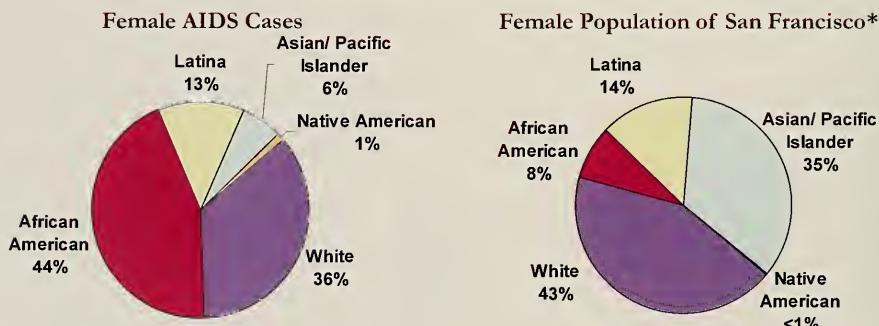


# HIV/AIDS among Women

## AIDS surveillance data

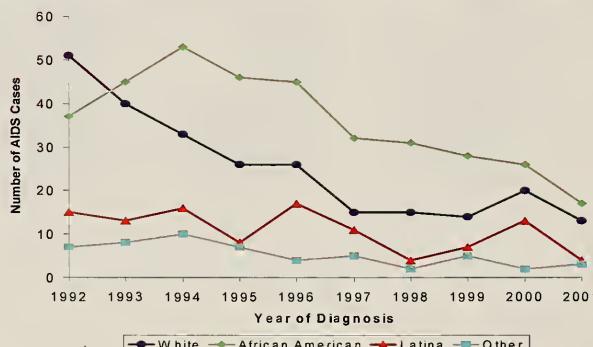
African American women comprise a disproportionate percent of the women with AIDS in San Francisco. Among female AIDS cases, 44% occurred among African Americans, even though African American women comprise only 8% of the San Francisco female population (Figure 12.1). The number of new AIDS cases among African American women has been higher than women of other race/ethnic groups between 1993 and 2001 (Figure 12.2). However, the number of new AIDS cases among African American women has been declining since 1997.

**Figure 12.1** Female AIDS cases diagnosed through December 2001 and female population by race/ethnicity, San Francisco



\* United States 2000 Census data.

**Figure 12.2** Female AIDS cases by race/ethnicity, San Francisco, 1992-2001

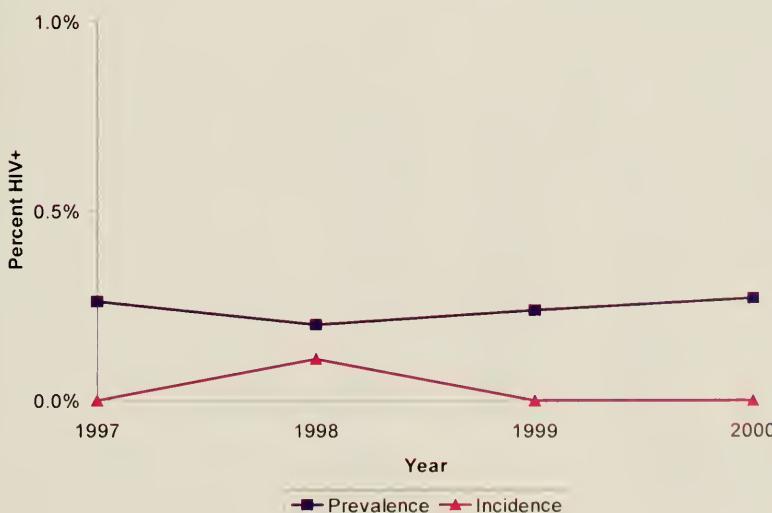


## HIV prevalence and incidence data

### *Anonymous Counseling and Testing Data*

Data originate from persons seeking voluntary HIV counseling and testing at anonymous sites in San Francisco. The data may therefore not be representative of women who do not seek HIV testing. HIV prevalence is measured as the number of women testing HIV antibody positive divided by the total number of women testing and presented as the percent *living with* HIV each year. Between 1997 and 2000, HIV prevalence among all women has remained stable and low, near 2 per 1000 (Figure 12.3). HIV incidence is estimated using STARHS (see Technical Notes) and is presented as percent *acquiring* HIV per year. HIV incidence has been 0% per year for most years. For 1998, HIV incidence was 1.1 per 1000 per year, resulting from recent infection detected among women reporting no data on risk.

**Figure 12.3** HIV prevalence and incidence among women at anonymous testing sites, San Francisco, 1997-September 2000

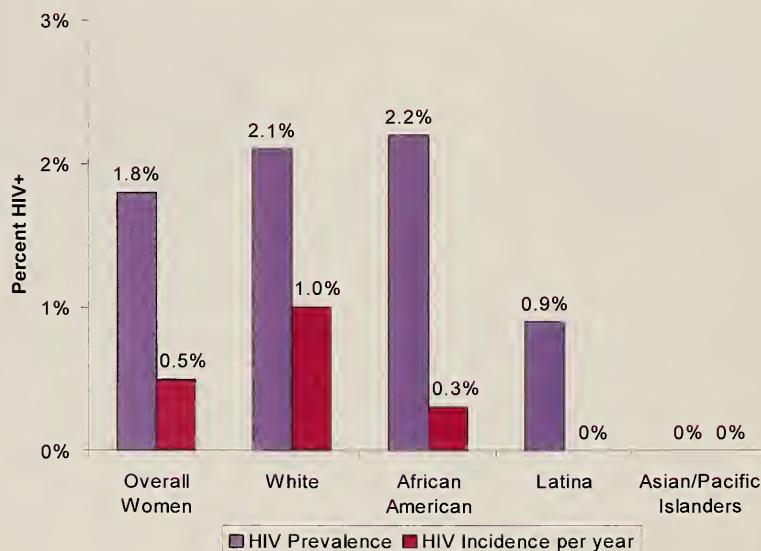


### ***The County Jail Survey***

A blinded, unlinked HIV prevalence and incidence survey was conducted among persons upon intake in the central county jail from June 1999 to July 2001. Participants were women who agreed to sexually transmitted disease screening and treatment age 18 to 45 years. Conventional and STARHS testing for HIV were conducted on residual sera from syphilis screening after specimens and records were permanently stripped of identifying information.

Overall HIV prevalence among female jail inmates was 1.8% and incidence was 5 per 1000 per year (Figure 12.4). White and African American women had the highest prevalence and incidence of HIV by race/ethnicity.

**Figure 12.4 HIV prevalence and incidence among women in the county jail by race/ethnicity, San Francisco, June 1999-July 2001**



## 13

# HIV/AIDS among Adolescents and Young Adults

## AIDS surveillance data

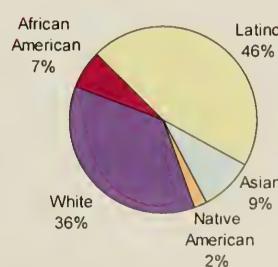
As of December 31, 2001, 44 AIDS cases among adolescents (aged 13-19 years) and 532 cases among young adults (aged 20-24 years) were diagnosed in San Francisco (Table 13.1). The characteristics of young adults with AIDS are similar to other adults; the majority are MSM, white, and male. Male-male sex also accounts for the greatest proportion of AIDS cases among the 13-19 year olds. However, in contrast to young adults in which MSM IDU are the second most frequent risk group, transfusion/hemophilia-related cases account for 25% of adolescent AIDS cases. Eleven percent of adolescent AIDS cases were perinatally acquired. Latinos (45%) and whites (36%) have the greatest representation among adolescent AIDS cases and are over-represented when compared with the general adolescent population in San Francisco (Figure 13.1).

**Table 13.1 Adolescent and young adult AIDS cases by risk, gender, and race/ethnicity, diagnosed through December 2001, San Francisco**

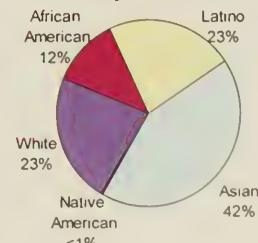
	13-19 Years Old (N=44)	20-24 Years Old (N=532)
<b>Risk</b>		
MSM	30%	60%
IDU	0%	9%
MSM IDU	18%	24%
Transfusion/Hemophilia	25%	2%
Heterosexual	9%	4%
Perinatal	11%	0%
Unidentified	7%	1%
<b>Gender</b>		
Male	84%	94%
Female	16%	6%
<b>Race/Ethnicity</b>		
White	36%	63%
African American	7%	14%
Latino	45%	18%
Asian/Pacific Islander	9%	4%
Native American	2%	1%

**Figure 13.1 Adolescent AIDS cases diagnosed through December 2001 and adolescent population by race/ethnicity, San Francisco**

### Adolescent AIDS Cases



### San Francisco Adolescent Population\*



\* United States 2000 Census data.

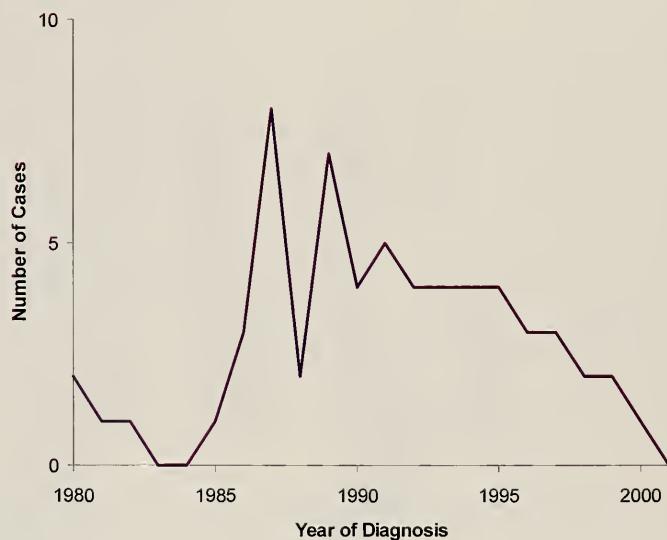
## 14

## HIV/AIDS among Children

## AIDS surveillance data

As of December 31, 2001, a cumulative total of 61 pediatric AIDS cases (less than 13 years) were diagnosed in San Francisco. The first pediatric case was diagnosed in San Francisco in 1980 (Figure 14.1). The number of pediatric AIDS cases peaked between 1987 and 1989 and reached a plateau between 1990 and 1995. The number of children with AIDS diagnosed each year continued to decline after 1995. Of note, no pediatric AIDS cases were reported in 2001. As reported in the previous report (HIV/AIDS Epidemiology Annual Report 2000), half of the pediatric AIDS cases were male, 36% were African American, 30% were white, and 74% acquired HIV infection perinatally.

Figure 14.1 Pediatric AIDS cases by year of diagnosis, San Francisco, 1980-2001



## Perinatal HIV data

Data on children with HIV in San Francisco are gathered through the Pediatric Spectrum of Disease (PSD) project. The PSD project was established in 1989 by the Centers for Disease Control and Prevention and collects data from eight areas throughout the United States. In Northern California, hospital surveillance for children less than 13 years old infected with HIV or for infants born to infected mothers has occurred at eight pediatric hospitals (including University of California at San Francisco and San Francisco General Hospital). Records from HIV positive pediatric patients cared for through the California Children's Services program, a state agency providing funding and case management for HIV-positive children, are also included in the PSD project. Data presented here include infants born to mothers documented to have HIV before delivery and without a history of blood or blood product transfusion before 1985.

Through December 31, 2001, 279 infants were born to HIV-infected mothers in San Francisco (Table 14.1). Forty-four (16%) of these infants were confirmed as HIV infected, 215 (77%) seroreverted (that is, were determined to be uninfected after maternal antibodies disappeared), and 20 (7%) are of unknown serostatus. Of the 44 HIV-infected infants, 9 are living with AIDS, 22 are living with HIV non-AIDS, 11 died of AIDS, and 2 died of HIV non-AIDS. Fifty-four percent of perinatally exposed infants were African American, 19% were Latino, and 18% were white.

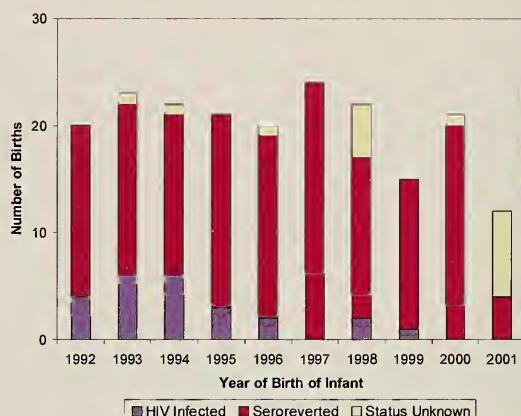
**Table 14.1** Infants born to HIV-infected mothers by infant's HIV status and race/ethnicity, San Francisco, through December 2001

Total	N ( % )
	279
<b>Infant HIV Status</b>	
HIV-infected	44 ( 16 )
AIDS (alive)	9 ( 3 )
AIDS (dead)	11 ( 4 )
HIV only (alive)	22 ( 8 )
HIV only (dead)	2 ( 1 )
Seroreverted (HIV-)	215 ( 77 )
Unknown	20 ( 7 )
<b>Race/Ethnicity</b>	
White	51 ( 18 )
African American	151 ( 54 )
Latino	54 ( 19 )
Asian/Pacific Islander	17 ( 6 )
Other/Unknown	6 ( 2 )

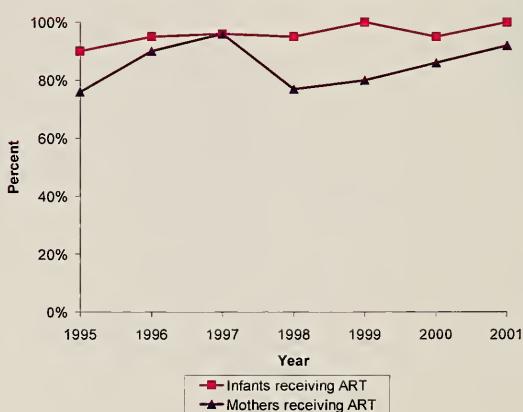
The number of perinatally exposed infants who were confirmed as HIV infected has declined since 1996. Between 1997 and 2001, there were only three HIV infected infants born to infected women in San Francisco and none in 2000 or 2001 (Figure 14.2). This is due to the improved therapies for mothers throughout pregnancy and for infants to prevent perinatal transmission. In 2001, there were 12 infants born to HIV-infected mothers; most of them are still under investigation to determine the infant's HIV infection status.

The vast majority of HIV-infected mothers received antiretroviral therapy during pregnancy (Figure 14.3). In 2001, 92% of HIV-infected mothers received antiretroviral therapy.

**Figure 14.2 Infants born to HIV-infected mothers by year of birth and infant's HIV status, San Francisco, 1992-2001**



**Figure 14.3 Percent of HIV-infected mothers and their infants receiving antiretroviral therapy, San Francisco, 1995-2001**



## 15

# HIV/AIDS among Transgender Persons

## AIDS surveillance data

Persons with AIDS are categorized as transgender if information regarding changes in gender identity is listed in the medical record. Information on transgender status has been collected since 1996. As of December 31, 2001, a total of 273 transgender AIDS cases were diagnosed (Table 15.1). Comparison of transgender AIDS cases to the total number of AIDS cases diagnosed through December 31, 2001 demonstrates some important differences. Sixty-eight percent of transgender cases were nonwhite compared to 26% of total AIDS cases. Transgender persons with AIDS were more likely to inject drugs than were total AIDS cases (55% and 20%, respectively). Transgender AIDS cases were also younger than total AIDS cases.

**Table 15.1** Characteristics of transgender<sup>#</sup> AIDS cases and cumulative AIDS cases diagnosed through December 2001, San Francisco

	Transgender AIDS Cases Diagnosed through December 2001		AIDS Cases Diagnosed through December 2001	
<b>Total</b>	<b>273</b>		<b>27,923</b>	
<b>Race/Ethnicity</b>				
White	86	32%	20,616	74%
African American	91	33%	3,404	12%
Latino	70	26%	2,959	11%
Asian/Pacific Islander	24	9%	809	3%
Native American	2	1%	135	<1%
<b>Injection Drug Use</b>				
Yes	150	55%	5,597	20%
No	123	45%	22,326	80%
<b>Age at Diagnosis</b>				
0 - 19	2	1%	105	<1%
20 - 29	73	27%	3,297	12%
30 - 39	123	45%	12,767	46%
40 - 49	61	22%	8,582	31%
50+	14	5%	3,172	11%

# See Technical Notes "Transgender Status."

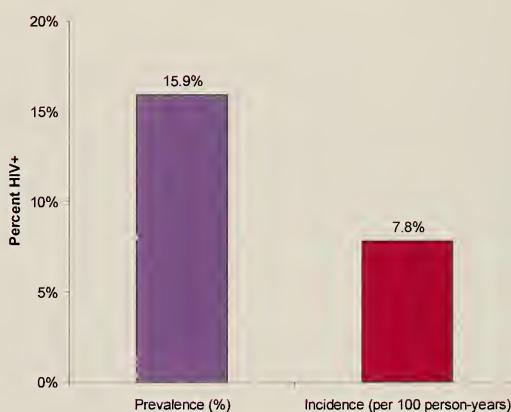
## HIV prevalence and incidence data

### HIV Counseling and Testing Sites

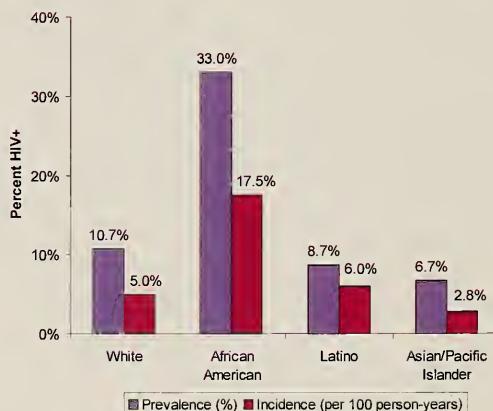
Data are male-to-female (MTF) transgender persons who repeatedly tested for HIV at any public site in San Francisco between 1997 and 2001 (Kellogg et al., 2001). HIV seroconversions were identified as those who tested HIV positive with a history of a prior HIV-negative test.

HIV prevalence (15.9%) and incidence (7.8 per 100 person-years) among MTF transgenders were the highest for any population of persons testing (Figure 15.1). By race/ethnicity, African American MTF transgenders had significantly higher HIV prevalence (33.0%) and incidence (17.5 per 100 person-years) than any other group (Figure 15.2).

**Figure 15.1** HIV prevalence and incidence data among transgender persons testing at HIV confidential and anonymous testing sites, July 1997-February 2001



**Figure 15.2** HIV prevalence and incidence among transgender persons testing at HIV confidential and anonymous testing sites by race/ethnicity, July 1997-February 2001



## 16

# Homeless Persons with AIDS

## AIDS surveillance data

Information on homelessness among persons diagnosed with AIDS has been collected since 1990. The proportion of persons with AIDS who are homeless at the time of diagnosis increased each year between 1992 and 2000 (Figure 16.1). Fourteen percent of AIDS cases diagnosed in 2000 and in 2001 were homeless at the time of their diagnosis. Compared to the total number of AIDS cases diagnosed between 1992 and 2001, homeless persons with AIDS were more likely to be women, nonwhite, injection drug users, and younger (Table 16.1).

Figure 16.1 Percent of homeless AIDS cases by year of diagnosis, San Francisco, 1992-2001

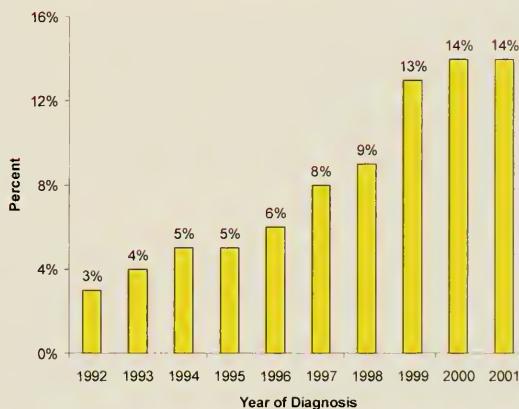


Table 16.1 Characteristics of homeless AIDS cases and AIDS cases diagnosed between 1992 and 2001, San Francisco

	Homeless AIDS Diagnosed 1992-2001 (N=789)	AIDS Cases Diagnosed 1992-2001 (N=13,208)
<b>Gender</b>		
Male	86%	94%
Female	14%	6%
<b>Race/Ethnicity</b>		
White	44%	68%
African American	39%	16%
Latino	15%	12%
Other	2%	4%
<b>Exposure Category</b>		
MSM	21%	72%
IDU	43%	11%
MSM IDU	32%	13%
Heterosexual Contact	3%	2%
Other	2%	2%
<b>Age at Diagnosis</b>		
0 - 19	1%	<1%
20 - 29	18%	11%
30 - 39	46%	44%
40 - 49	28%	33%
50+	7%	12%

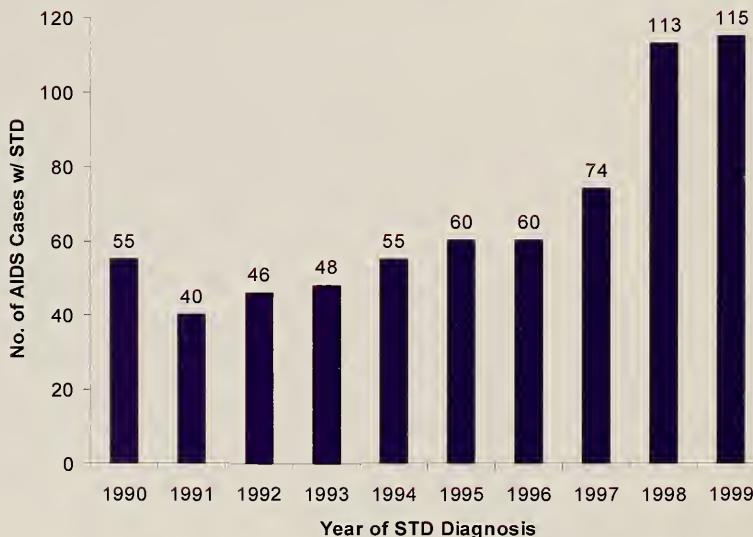
## 17

# Sexually Transmitted Diseases among Persons with AIDS

## AIDS and STD surveillance data

Diagnosis of sexually transmitted diseases (STD) occurring among persons with AIDS was determined through a computerized match of the AIDS and STD case registries through 1999. A match was verified by name, date of birth, and gender. The STD registry included persons reported with gonorrhea, chlamydia, nongonococcal urethritis, or infectious syphilis. Cases of STDs among persons with AIDS have steadily risen since 1991 (Figure 17.1). There were 60, 74, 113, and 115 cases of STDs respectively for the years 1996 through 1999. All STDs occurred after the AIDS diagnosis.

**Figure 17.1** Number of AIDS cases diagnosed with an STD by year of STD diagnosis, San Francisco, 1990-1999



# AIDS Progression Project

Antiretroviral therapy has decreased AIDS incidence and mortality, but some people with HIV still progress to AIDS and die from AIDS. To describe characteristics of persons recently diagnosed with AIDS and persons with AIDS who died, medical record abstraction was performed for the 12 months preceding an AIDS diagnosis or AIDS death for persons who were diagnosed with AIDS or died with AIDS in 1999 and 2000.

Of the 547 persons recently diagnosed with AIDS, 299 (55%) were persons whose first HIV test occurred within six months prior to their AIDS diagnosis (late testers) (Table 18.1). There was a higher proportion of men and Asian/Pacific Islanders who were late testers. Compared with injection drug users, men who have sex with men, heterosexuals and persons with no identifiable risk were more likely to be late testers. Persons with private insurance or no insurance were more likely to be late testers than those with public insurance. Those who were incarcerated in the year prior to AIDS diagnosis were less likely to be late testers.

**Table 18.1** Characteristics of persons with AIDS diagnosed in 1999 and 2000, reported between January 2000 and March 2001, San Francisco AIDS Progression Project

	AIDS Cases Diagnosed 1999-2000		Percent of Late Testers <sup>#</sup>
	No.	( % )	
<b>Total</b>	<b>547</b>	(100%)	<b>55%</b>
<b>Gender</b>			
Male	493	( 90% )	56%
Female	54	( 10% )	44%
<b>Race/Ethnicity</b>			
White	311	( 57% )	53%
African American	114	( 21% )	53%
Latino	94	( 17% )	57%
Asian/Pacific Islander	21	( 4% )	71%
Native American	7	( 1% )	57%
<b>Mode of Transmission</b>			
MSM	331	( 61% )	60%
IDU	94	( 17% )	48%
MSM IDU	82	( 15% )	37%
Heterosexual	27	( 5% )	59%
Other/Unknown	13	( 2% )	85%
<b>Age at Diagnosis</b>			
13-29	55	( 10% )	58%
30-39	234	( 43% )	56%
40-49	163	( 30% )	52%
50+	95	( 17% )	55%
<b>Medical Insurance Status at Time of Diagnosis*</b>			
Private	194	( 35% )	61%
Public	103	( 19% )	32%
Non-insured	233	( 43% )	58%
<b>Incarcerated*</b>			
Yes	27	( 5% )	41%
No	505	( 92% )	55%
<b>Homeless*</b>			
Yes	73	( 13% )	56%
No	462	( 84% )	54%

# Persons who were first tested for HIV within 6 months of AIDS diagnosis.

\* Excludes persons with unknown status.

Of the 215 persons who recently died with AIDS, 92% were male, 60% were white, 28% were African American, 40% were injection drug users, and 60% had public insurance at time of death (Table 18.2). Thirty-nine percent of those who died did not receive any antiretroviral therapy one year prior to death. Women, African Americans, injection drug users, and those with public insurance or no insurance were more likely to not have received antiretroviral therapy one year prior to death.

**Table 18.2** Characteristics of persons with AIDS who died in 1999 and 2000, reported between January 2000 and March 2001, San Francisco AIDS Progression Project

	AIDS Deaths Occurred		Percent with No History of ART <sup>#</sup>
	1999-2000 No.	( % )	
<b>Total</b>	<b>215</b>	<b>(100%)</b>	<b>39%</b>
<b>Gender</b>			
Male	197	( 92% )	37%
Female	18	( 8% )	56%
<b>Race/Ethnicity</b>			
White	128	( 60% )	31%
African American	60	( 28% )	53%
Latino	17	( 8% )	35%
Other	10	( 5% )	50%
<b>Mode of Transmission</b>			
MSM	124	( 58% )	30%
IDU	42	( 20% )	60%
MSM IDU	42	( 20% )	43%
Other/Unknown	7	( 3% )	43%
<b>Medical Insurance Status at Time of Death<sup>*</sup></b>			
Private	59	( 27% )	22%
Public	128	( 60% )	44%
Non-insured	27	( 13% )	48%

# No documented history of antiretroviral use during one year period of time prior to death.

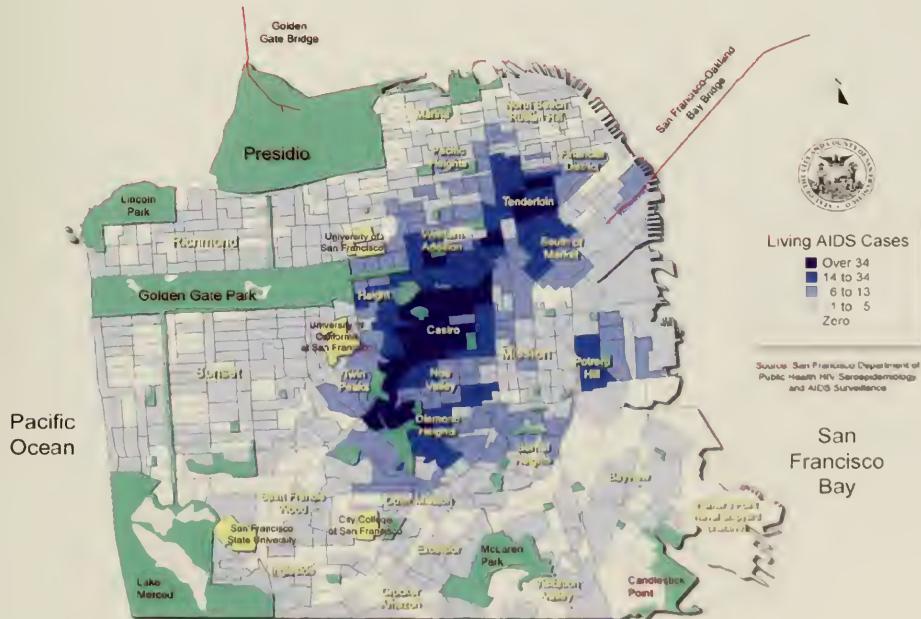
\* Excludes 1 person whose insurance status was unknown.

## 19

# Geographic Distribution of AIDS

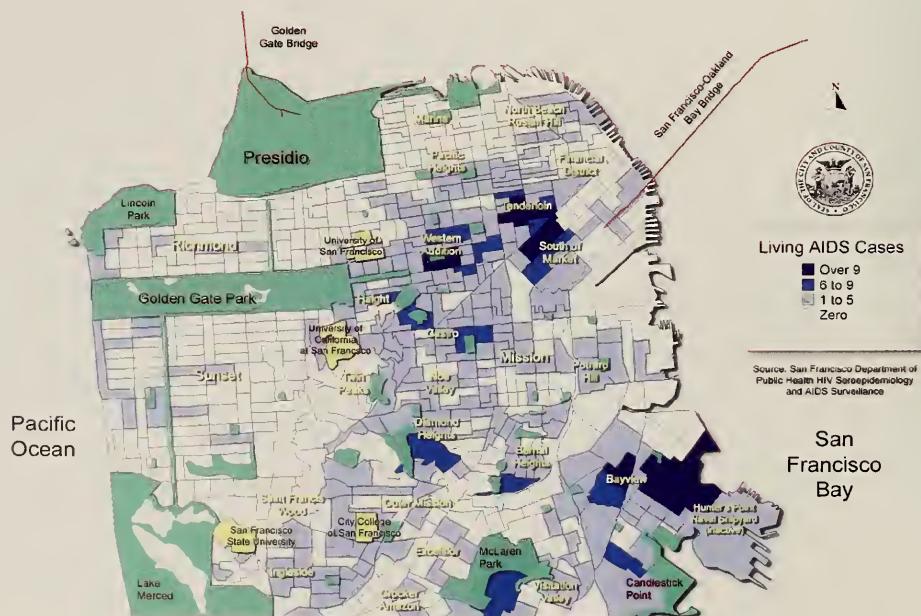
This map shows the geographic distribution of whites living with AIDS in 2001 by US Census Block Groups in San Francisco. Note that the scale includes considerably higher numbers per Block Group compared to all other race/ethnicities (below). The largest number of whites living with AIDS reside in the Castro, a somewhat higher-income neighborhood with a large gay community. Lower-income areas adjacent to the Castro, including the Mission, Diamond Heights, Duboce Triangle, and the Western Addition are also home to many whites living with AIDS. The lower-income, ethnically diverse Tenderloin and Potrero Hill neighborhoods constitute distinct epidemic centers for HIV/AIDS among whites outside the Castro area. Data include persons who were residents of San Francisco at the time of their diagnosis and who were known to be alive on 31 December, 2001. Data do not include persons living with HIV infection who have not progressed to an AIDS diagnosis.

Map 19.1 Living AIDS cases among whites in San Francisco, 2001



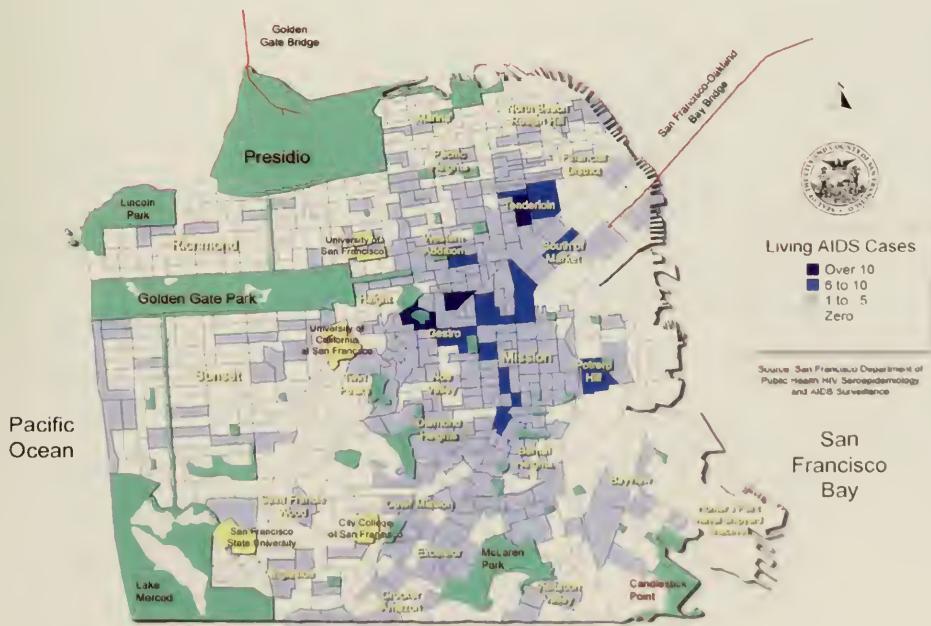
This map shows the geographic distribution of African Americans living with AIDS in 2001 by US Census Block Groups in San Francisco. Cases are concentrated in neighborhoods with high proportions of African Americans overall – Bayview, Hunters Point, Western Addition, Tenderloin, South of Market, and Potrero Hill. Low income neighborhoods in the southern tier of the city also have high numbers of African Americans living with AIDS, including Visitacion Valley, Bernal Heights, and Diamond Heights. In contrast to whites, there are relatively few African Americans living with AIDS in Castro. Data include persons who were residents of San Francisco at the time of their diagnosis and who were known to be alive on 31 December, 2001. Data do not include persons with HIV infection who have not progressed to an AIDS diagnosis.

**Map 19.2 Living AIDS cases among African Americans in San Francisco, 2001**



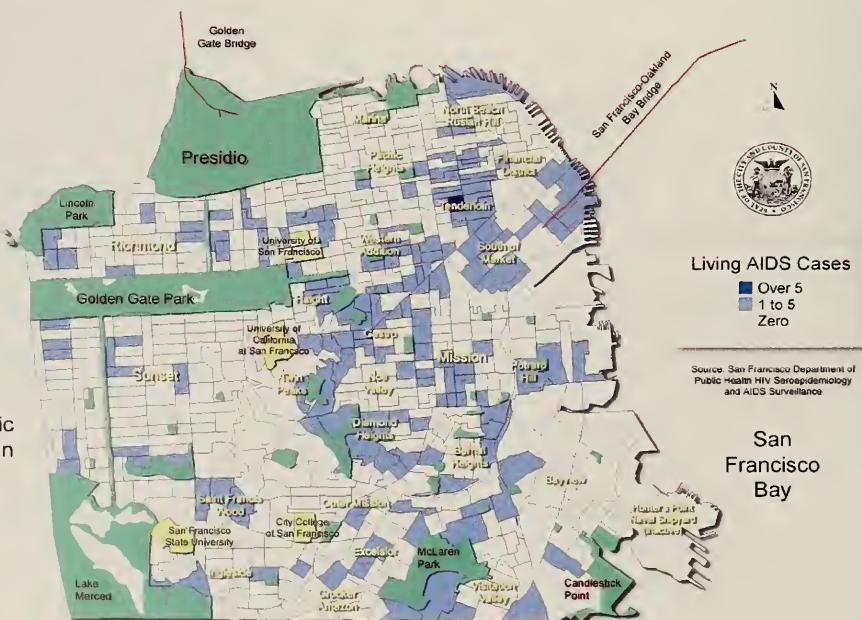
This map shows the geographic distribution of Latinos living with AIDS in 2001 by US Census Block Groups in San Francisco. The distribution of Latinos living with AIDS mirrors the large Latino community of the Mission, particularly in areas next to Castro. Low-income areas of the Tenderloin, South of Market, and Potrero Hill are also home to large numbers of Latinos living with AIDS. Data include persons who were residents of San Francisco at the time of their diagnosis and who were known to be alive on 31 December, 2001. Data do not include persons with HIV infection who have not progressed to an AIDS diagnosis.

Map 19.3 Living AIDS cases among Latinos in San Francisco, 2001



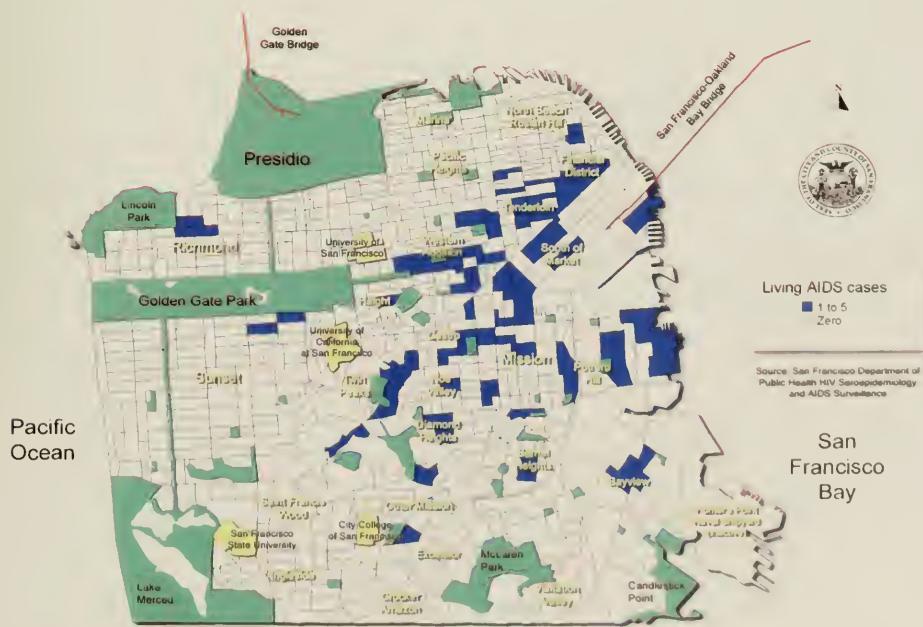
This map shows the geographic distribution of Asian/Pacific Islanders living with AIDS in 2001 by US Census Block Groups in San Francisco. The distribution of Asian/Pacific Islanders living with AIDS is diffuse. The pattern may reflect the diversity within San Francisco's Asian populations, which includes distinct communities by language, country or culture of origin, period of time in San Francisco, and socio-economic status. Data include persons who were residents of San Francisco at the time of their diagnosis and who were known to be alive on 31 December, 2001. Data do not include persons with HIV infection who have not progressed to an AIDS diagnosis.

**Map 19.4 Living AIDS cases among Asian/Pacific Islanders in San Francisco, 2001**



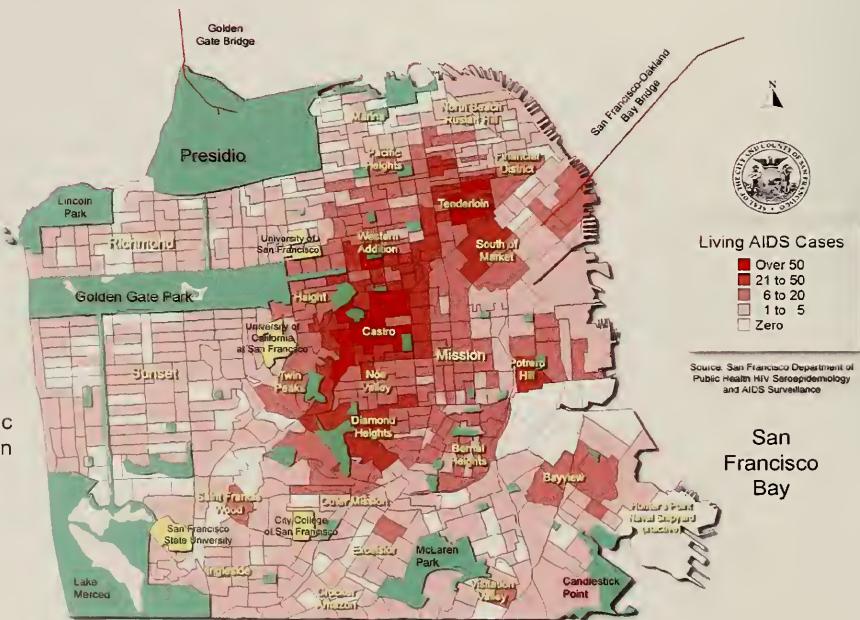
This map shows the geographic distribution of Native Americans living with AIDS in 2001 by US Census Block Groups in San Francisco. Native Americans living with AIDS reside in scattered low-income, inner-city areas of the eastern half of San Francisco. Data include persons who were residents of San Francisco at the time of their diagnosis and who were known to be alive on 31 December, 2001. Data do not include persons with HIV infection who have not progressed to an AIDS diagnosis.

### Map 19.5 Living AIDS cases among Native Americans in San Francisco, 2001



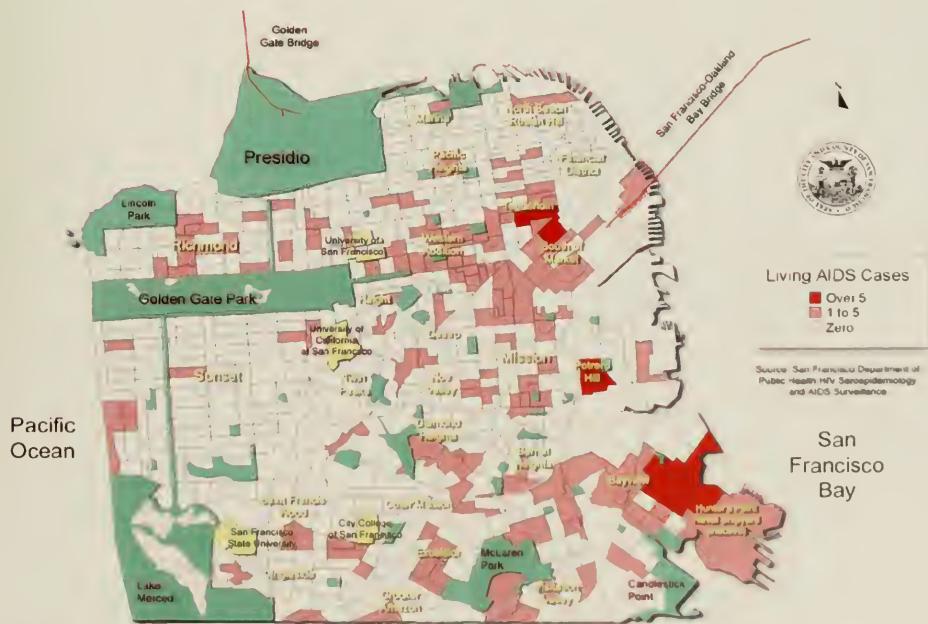
This map shows the geographic distribution of men living with AIDS in 2001 by US Census Block Groups in San Francisco. Because the vast majority of cases among men are MSM, the Castro accounts for the largest number of men living with AIDS. The Tenderloin, South of Market, Potrero Hill, Mission, Diamond Heights, and Western Addition are also home to large numbers of men living with AIDS. Data include persons who were residents of San Francisco at the time of their diagnosis and who were known to be alive on 31 December, 2001. Data do not include persons with HIV infection who have not progressed to an AIDS diagnosis.

Map 19.6    Male living AIDS cases in San Francisco, 2001



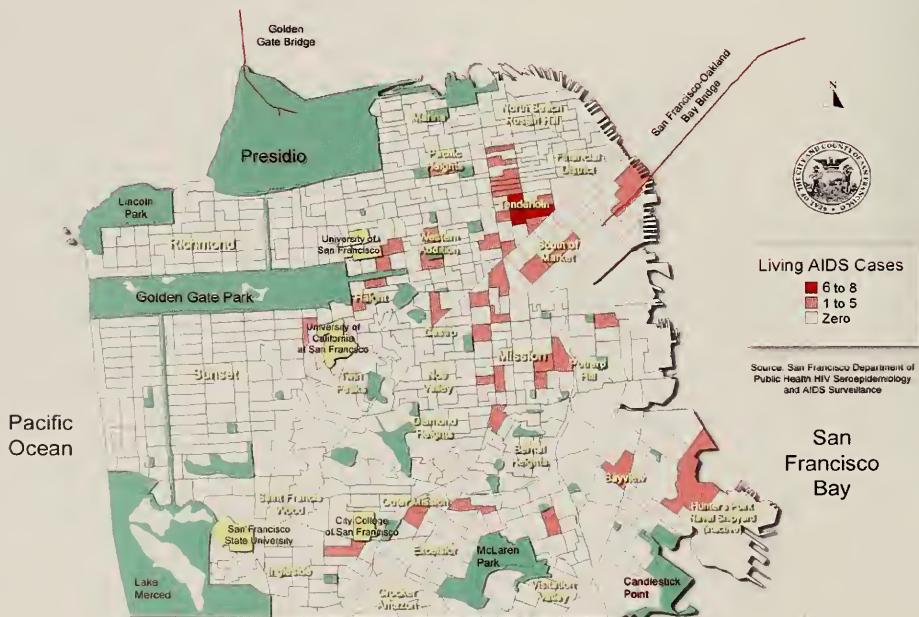
This map shows the geographic distribution of women living with AIDS in 2001 by US Census Block Groups in San Francisco. Women living with AIDS tend to reside in the inner-city, low income areas in the eastern half of San Francisco, including the Tenderloin, South of Market, Potrero Hill, Bayview, Hunters Point, Visitacion Valley, Bernal Heights, Mission, Diamond Heights and Western Addition. Data include persons who were residents of San Francisco at the time of their diagnosis and who were known to be alive on 31 December, 2001. Data do not include persons with HIV infection who have not progressed to an AIDS diagnosis.

Map 19.7 Female living AIDS cases in San Francisco, 2001



This map shows the geographic distribution of male to female transgender persons (MTF) living with AIDS in 2001 by US Census Block Groups in San Francisco. MTF living with AIDS tend to reside in the low-income, inner-city Tenderloin neighborhood and adjacent areas of Nob Hill and South of Market. Mission, Mission Dolores, Western Addition, Bayview and low-income areas in the south of the city are also home to MTF living with AIDS. Data include persons who were residents of San Francisco at the time of their diagnosis and who were known to be alive on 31 December, 2001. Data do not include persons with HIV infection who have not progressed to an AIDS diagnosis. MTF may be under-reported in surveillance data if their sex is recorded as female or male without indication of their gender reassignment.

**Map 19.8    Male to female transgender persons living with AIDS in San Francisco, 2001**



# T

# Technical Notes

## AIDS Incidence Rates

Annual race-specific rates are calculated as the number of cases diagnosed for a particular race/ethnic group during each year divided by the population for that race/ethnicity, multiplied by 100,000. These rates are calculated separately for males and females. Population denominators are based on the population projections for the years 1992-2001, from the Demographic Research Unit, Department of Finance, California ([www.dof.ca.gov](http://www.dof.ca.gov)).

## AIDS Survival

Survival was calculated as the time between the date of initial AIDS diagnosis and the date of death. This includes persons with low CD4 (count<200 or percent<14%) and persons diagnosed with AIDS opportunistic illnesses. The follow-up information of cases was obtained through retrospective and prospective reviews of laboratory records and medical charts. Dates of death were obtained through review of local death certificates, reports from the State Office of AIDS, and matches with the National Death Index (NDI). The most recent NDI match included deaths that occurred through December 31, 1999. Persons not known to have died were censored at the date of their last known follow-up or at December 31, 1999, whichever was more recent.

## Causes of Death

Cause of death information on death certificates is coded using the International Classification of Diseases, 10th revision (ICD-10) for deaths occurring in 1999 or after, and the 9th revision (ICD-9) for deaths occurring prior to 1999. These codes are then processed and evaluated using a computer system to determine the underlying and contributory causes of death ([www.cdc.gov/nchs/about/major/dvs/im.htm](http://www.cdc.gov/nchs/about/major/dvs/im.htm)). We obtained the ICD coded causes of death from the California multiple-cause-of-death computer tape for persons with AIDS who died prior to 1996. For AIDS deaths that occurred in 1996 and after, the cause of death information was obtained through the match with the National Death Index. Deaths attributable to HIV infection or AIDS are coded as 042-044 under ICD-9 and B20-B24 under ICD-10. In addition, the AIDS opportunistic illnesses (see Table 8.1), if listed on death certificates, are included in the category of 'HIV/AIDS' cause of death.

## Grouping of Data Categories

Data regarding certain race/ethnic or risk categories are grouped together when the number of persons with HIV/AIDS in that particular group is small and/or does not present significant trends. For example, "Other" in the Race/Ethnicity breakdown represents Asian/Pacific Islander and Native American; "Other"

in the Exposure Category breakdown includes transfusion, hemophilia, heterosexual, perinatal AIDS, or persons of unidentified risk.

## **Serological Testing Algorithm for Recent HIV Seroconversion**

HIV incidence was derived by applying the Serological Testing Algorithm for Recent HIV Seroconversion (STARHS) to HIV positive specimens that were collected in the HIV prevalence surveys and from anonymous voluntary HIV counseling and testing sites (McFarland, et al., 1999). Retested HIV-positive specimens that were nonreactive on the less sensitive assay were defined as recent HIV infections (seroconverting within the preceding 170 days). HIV incidence was calculated as the number of recent infections divided by the number of recent infections plus the number of HIV negative specimens. HIV incidence, expressed as percent per year, was estimated by multiplying the rate of recent infection by  $(365 \div 170) \times 100$ .

## **Transgender Status**

In September 1996, the San Francisco Department of Public Health began noting transgender status when this information is contained in the medical record. Transgender individuals are listed as either male-to-female or female-to-male. Please note that there are several limitations to our transgender data. We believe that our report likely underestimates the number of transgender persons affected by AIDS because data collected for AIDS reporting are derived from the medical record. Consequently, information that may be discussed with the health care provider but not recorded in the medical record is generally not available for the purposes of AIDS case reporting. Because information about transgender status was not collected in a uniform way until September 1996, we have limited data on transgender prior to this, and therefore cannot perform valid time trend analysis for this group.

## **Treatments**

The type and starting date of HIV antiretroviral therapy is obtained at the time of initial case report and through prospective reviews of medical records. Persons noted to have received a protease inhibitor or a nonnucleoside reverse transcriptase inhibitor were considered to have received highly active antiretroviral therapy (HAART). Use of HIV therapies among persons living with AIDS by year was calculated as the number of persons who were alive at the end of each year and who started the treatment prior to or during that year, divided by the total number of persons living with AIDS at the end of each year. Use of HAART among persons living with AIDS by gender, race/ethnicity, and risk was calculated as the number of persons living with AIDS as of December 31, 2001, for each gender, race, or risk group who were noted to have ever received HAART, divided by the total number of persons living with AIDS as of December 31, 2001, for each gender, race, and risk group. Persons who were diagnosed at a facility outside of San Francisco and persons whose treatment information was not available were excluded.

## B

## Bibliography

Dilley JW, McFarland W, Woods WJ, Sabatino J, Lihatsh T, Adler B, Swig L, Dark T. Thoughts associated with unprotected anal intercourse among men at high risk in San Francisco, 1997-1999. *Psychology & Health* 2002;17(2):235-46.

Gibson S, McFarland W, Wohlfeiler D, Scheer K, Katz MH. Experiences of 100 men who have sex with men using the Reality condom for anal sex. *AIDS Education and Prevention* 1999;11(1):65-71.

Hsu L, Vittinghoff E, Katz M, Schwarcz S. Predictors of use of highly active antiretroviral therapy (HAART) among persons with AIDS in San Francisco, 1996-1999. *J Acquir Immune Defic Syndr* 2001;28(4):345-50.

Hsu L, Schwarcz S, Katz M. Comparison of simultaneous active and passive AIDS case reporting in San Francisco. *J Acquir Immune Defic Syndr* 2000;23(2):204-5.

Katz MH, Schwarcz SK, Kellogg TA, Klausner JD, Dilley JW, Gibson S, McFarland W. Impact of highly active antiretroviral treatment on HIV seroincidence among men who have sex with men: San Francisco. *Am J Public Health* 2002 Mar;92(3):388-94.

Katz MH, Cunningham WE, Fleishman JA, Andersen RM, Kellogg T, Bozzette SA, Shapiro MF. Effect of case management on unmet needs and utilization of medical care and medications among HIV-infected persons. *Ann Intern Med* 2001 Oct 16;135(8 Pt 1):557-65.

Katz MH, Cunningham WE, Mor V, Andersen RM, Kellogg T, Zierler S, Crystal SC, Stein MD, Cylar K, Bozzette SA, Shapiro MF. Prevalence and predictors of unmet need for supportive services among HIV-infected persons: impact of case management. *Med Care* 2000;38(1):58-69.

Kellogg TA, Clements-Nolle K, Dilley J, Katz MH, McFarland W. Incidence of human immunodeficiency virus among male-to-female transgendered persons in San Francisco. *J Acquir Immune Defic Syndr* 2001 Dec 1;28(4):380-4.

Kellogg TA, McFarland W, Perlman JL, Weinstock H, Bock S, Katz MH, Gerberding JL, Bangsberg DR. HIV incidence among repeat HIV testers at a county hospital, San Francisco, California, U.S.A. *J Acquir Immune Defic Syndr* 2001 Sep 1;28(1):59-64.

Kellogg TA, McFarland W, Katz M. Recent increases in HIV seroconversion among repeat anonymous testers in San Francisco. *AIDS* 1999 Nov 12;13(16):2303-4.

Kim A, Kent CK, McFarland W, Klausner J. Cruising on the Internet highway. *J Acquir Immune Defic Syndr* 2001;28:89-93.

Kim AA, McFarland W, Kellogg T, Katz MH. Sentinel surveillance for HIV infection and risk behavior among adolescents entering juvenile detention in San Francisco: 1990-1995. *AIDS* 1999 Aug 20;13(12):1597-8.

Klausner JD, McFarland W, Bolan G, Hernandez MT, Molitor F, Lemp GF, Cahoon-Young B, Morrow S, Ruiz J, for the Young Women's Survey Team. Knock-knock: population-based survey of risk behavior, health care access and sexually transmitted diseases among low-income women in the San Francisco Bay Area. *Journal of Infectious Diseases* 2001;183(7):1087-92.

Marins JR, Page-Shafer K, Barros M, Hudes ES, Chen S, Hearst N. Seroprevalence and risk factors for HIV infection among incarcerated men in Sorocaba, Brazil. *AIDS Behav* 2000;4(1):121-8.

MacKellar DA, Valleroy LA, Secura GM, Bartholow BN, McFarland W, Shehan D, Ford W, LaLota M, Celentano DD, Koblin BA, Torian LV, Thiede H, Janssen RS for the Young Men's Survey Group. Repeat HIV testing, risk behaviors, and HIV seroconversion among young men who have sex with men: a call to monitor and improve the practice of prevention. *J Acquir Immune Defic Syndr* 2002;29:76-85.

MacKellar DA, Valleroy LA, Hoffmann JP, Glebatis D, LaLota M, McFarland W, Westerholm J, Janssen RS. Gender differences in sexual behaviors and factors associated with nonuse of condoms among homeless and runaway youths. *AIDS Education and Prevention* 2000;12(6):477-91.

McFarland W, Katz MH, Stoyanoff SR, Shehan DA, LaLota M, Celentano DD, Koblin BA, Torian LV, Theide H. HIV incidence among young men who have sex with men – seven US cities, 1994-2000. *MMWR* 2001;50(21):440-4.

McFarland W, Caceres C. HIV surveillance among men who have sex with men. *AIDS* 2001;15(suppl 3):S23-32.

McFarland W, Kellogg TA, Louie B, Murrill C, Katz MH. Low estimates of HIV seroconversions among clients of a drug treatment clinic in San Francisco, 1995 to 1998. *J Acquir Immune Defic Syndr* 2000 Apr 15;23(5):426-9.

McFarland W, Busch MP, Kellogg TA, Rawal BD, Satten GA, Katz MH, Dilley J, Janssen RS. Detection of early HIV infection and estimation of incidence using a sensitive/less-sensitive enzyme immunoassay testing strategy at anonymous counseling and testing sites in San Francisco. *J Acquir Immune Defic Syndr* 1999 Dec 15;22(5):484-9.

McQuitty M, McFarland W, Kellogg TA, White E, Katz MH. Home collection versus publicly funded HIV testing in San Francisco: who tests where? *J Acquir Immune Defic Syndr* 1999 Aug 15;21(5):417-22.

Misegades L, Page-Shafer K, Halperin D, McFarland W. Anal intercourse among young low-income women in California: an overlooked risk factor for HIV? *AIDS* 2001;15:534-5.

Molitor F, Ruiz JD, Klausner J, McFarland W. History of forced sex in association with drug use and sexual HIV risk behaviors, possible infection with STDs, and diagnostic medical care: results from the Young Women's Survey. *Journal of Interpersonal Violence* 2000;15(3):262-78.

Moon M, McFarland W, Kellogg TA, Baxter M, Katz MH, MacKellar D, Valleroy L. HIV risk behavior of runaway youth in San Francisco: age of onset and relation to sexual orientation. *Youth and Society* 2000;32:184-202.

Page-Shafer K, Kim A, Norton P, Rugg D, Heitgerd J, Katz MH, McFarland W. Evaluating national HIV prevention indicators: a case study in San Francisco. *AIDS* 2000;14:2015-26.

Page-Shafer, McFarland W, Scheer K, Kohn R, Klausner J, Katz MH. Increasing HIV risk behavior and sexually transmitted disease rates in the interval of improved efficacy of antiretroviral therapy regimens, San Francisco, 1994-1997. *MMWR* 1999; Jan 29;48(3):46-8.

Qu S, Liu W, Choi K, Li R, Jiang D, Zhou Y, Tian F, Lee Chu P, Shi H, Zheng X, Mandel J. The potential for rapid sexual transmission of HIV in China: sexually transmitted diseases and condom failure highly prevalent among female sex workers. *AIDS Behav*, accepted for publication.

Ruiz J, Molitor F, McFarland W, Klausner J, Lemp G, Page-Shafer K, Parikh-Patel A, Morrow S, Sun R. Prevalence of HIV infection, sexually transmitted diseases, and hepatitis and related risk behavior in young women living in low-income neighborhoods of northern California. *West J Med* 2000;172:368-73.

Rutherford GW, Schwarcz SK, McFarland W. Surveillance for incident HIV infection: new technology and new opportunities. *J Acquir Immune Defic Syndr* 2000;25 Suppl 2:S115-9.

Scheer S, Parks C, McFarland W, Page-Shafer K, Delgado V, Ruiz J, Molitor F, Klausner J. Self-reported sexual identity, sexual behaviors and health risks: examples from a population-based survey of young women. *Journal of Lesbian Studies* 2002 (in press).

Scheer S, Peterson I, Page-Shafer K, Delgado V, Gleghorn A, Ruiz J, Molitor F, McFarland W, Klausner J, and the Young Women's Survey Team. Sex and drug use behavior among women who have sex with both women and men: results of a population-based survey. *Am J Public Health* 2002 (in press).

Scheer S, Lee Chu P, Klausner J, Katz M, Schwarcz S. Effect of highly active antiretroviral therapy on diagnoses of sexually transmitted diseases in people with AIDS. *Lancet* 2001;357:432-5.

Scheer S, McQuitty M, Denning P, Hormel L, Stephens B, Katz M, Schwarcz S. Undiagnosed and unreported AIDS deaths: results from the San Francisco medical examiner. *J Acquir Immune Defic Syndr* 2001;27:467-71.

Schwarcz S, Hsu L, Lee Chu P, Parisi MK, Bangsberg D, Hurley L, Pearlman J, Marsh K, Katz M. Evaluation of a non-name based HIV reporting system in San Francisco. *J Acquir Immune Defic Syndr* 2002; 29:504-10.

Schwarcz S, Kellogg T, McFarland W, Louie B, Kohn R, Busch M, Katz M, Bolan G, Klausner J, Weinstock H. Differences in the temporal trends of HIV seroincidence and seroprevalence among sexually transmitted disease clinic patients, 1989-1998: application of the serologic testing algorithm for recent HIV seroconversion. *Am J Epidemiol* 2001 May 5;153(10):925-34.

Schwarcz S, McFarland W, Katz M, Weinstock H. Should we estimate incidence for unidentified populations? *Am J Epidemiol* 2001;153:938.

Schwarcz S, McFarland W, Delgado V, Dilley J, Rinaldi J, Adler B, Withum D. Partner notification for persons recently infected with HIV: experience in San Francisco. *J Acquir Immune Defic Syndr* 2001;28(4):403-4.

Schwarcz S, Hsu L, Vittinghoff E, Katz M. Impact of protease inhibitors and other antiretroviral treatments on AIDS survival in San Francisco, California, 1987-1996. *Am J Epidemiol* 2000;152:178-85.

Schwarcz S, Hsu L, Parisi MK, Katz M. The impact of the 1993 AIDS case definition on the completeness and timeliness of AIDS surveillance. *AIDS* 1999;13:1109-14.

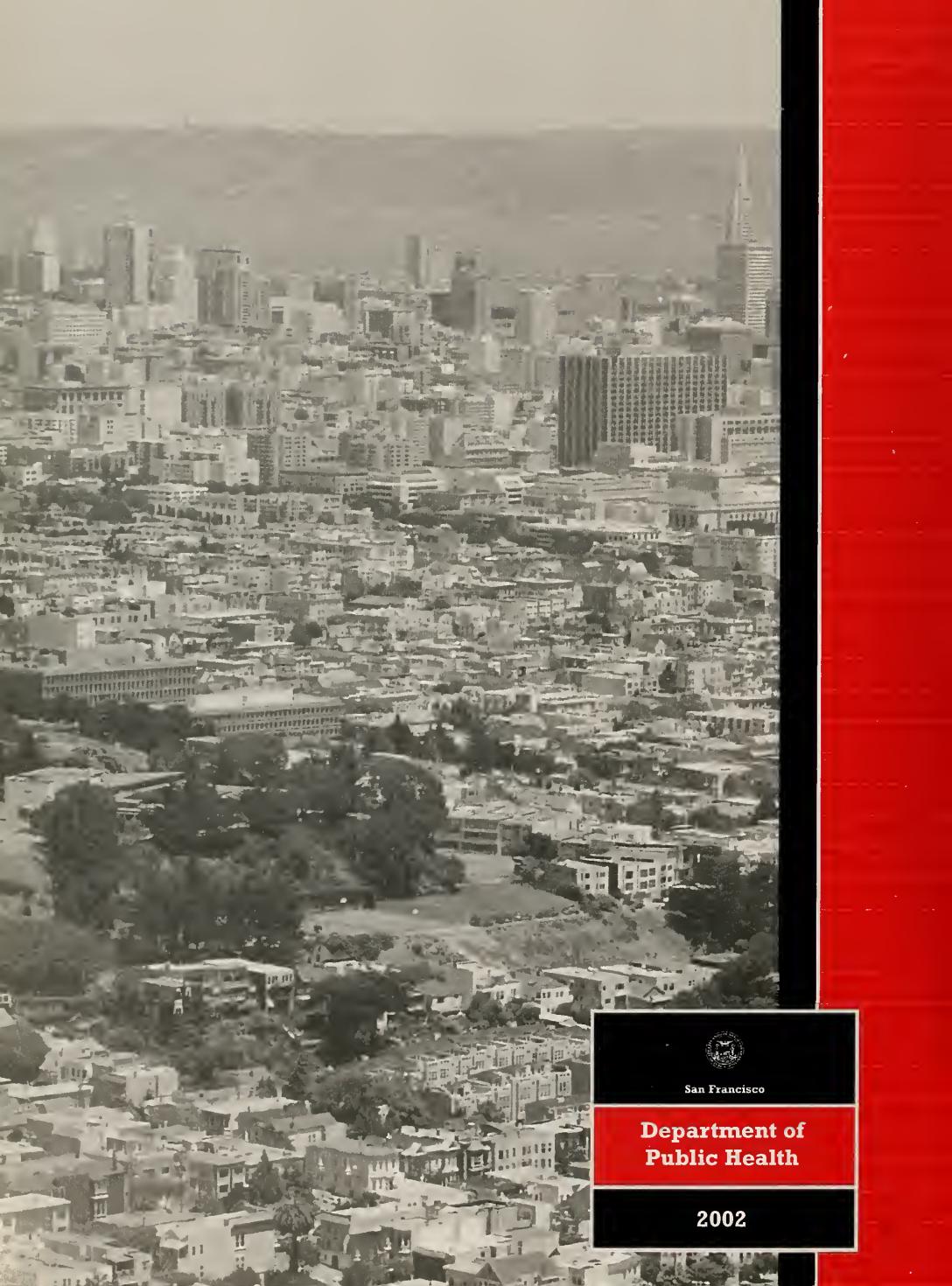
Stall RD, Hays RB, Waldo CR, Ekstrand M, McFarland W. The gay 90s: a review of research in the 1990s on sexual behavior and HIV risk among men who have sex with men. *AIDS* 2000;14:S1-14.

Valleroy LA, MacKellar DA, Karon JM, Rosen DH, Janssen RS, Celantano D, Shehan DA, Stoyanoff SR, LaLota M, Koblin BA, Torian LV, Katz MH, McFarland W, Thiede H. High HIV prevalence and associated risks among adolescent and young adult men who have sex with men in 7 US metropolitan areas in 1994 through 1998. *JAMA* 2000;284:198-204.

Waldo CR, McFarland W, Katz MH, MacKellar D, Valleroy LA. Very young gay and bisexual men are at risk for HIV infection: The San Francisco Bay Area Young Men's Survey II. *J Acquir Immune Defic Syndr* 2000;24:168-74.

White E, Katz MH, McFarland W. Whom does partner notification serve in San Francisco? A review of counseling and testing data from 1995 to 1997. *AIDS Behav* 1999;3:205-11.

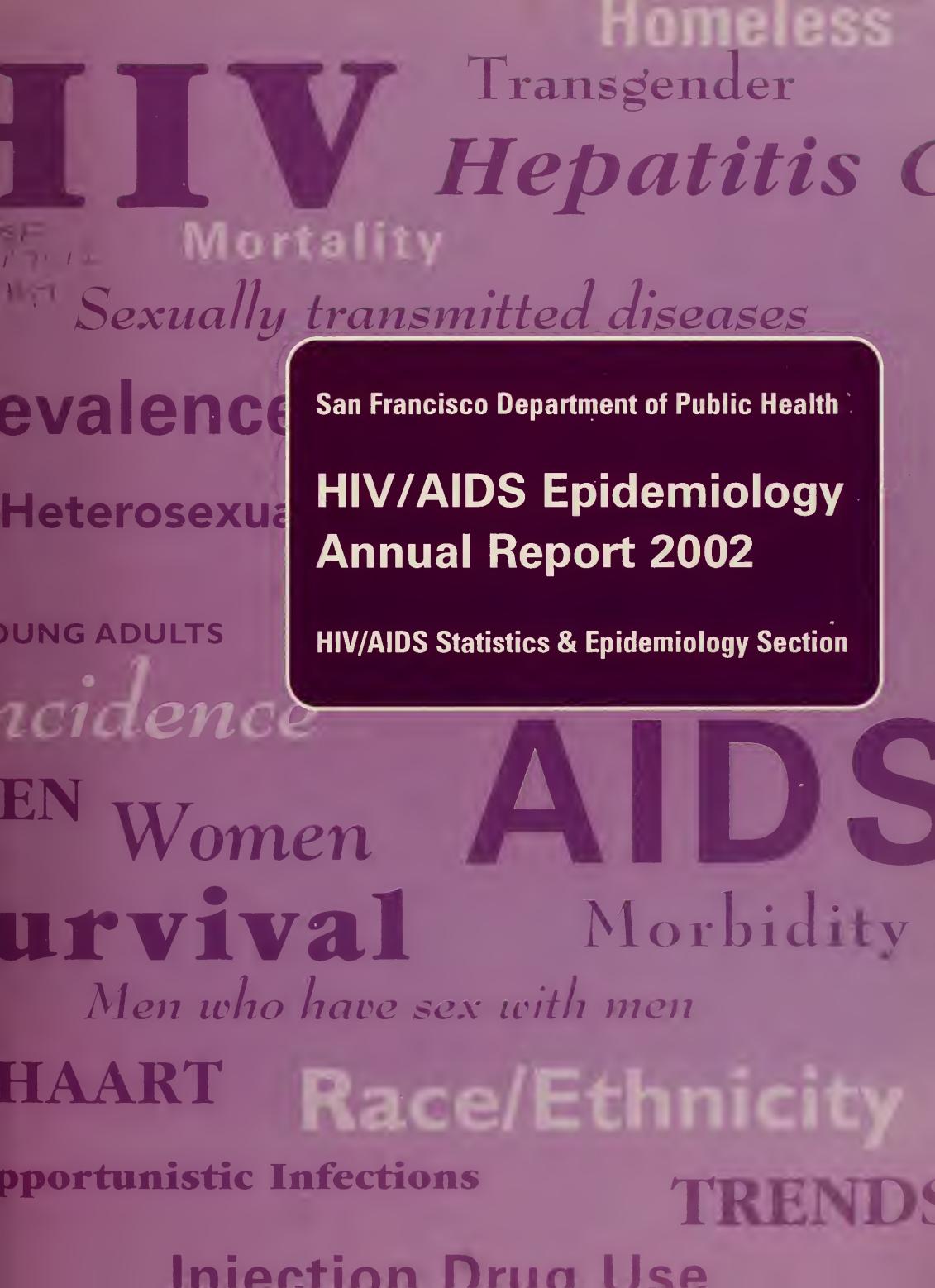




San Francisco

**Department of  
Public Health**

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San Francisco Department of Public Health

## HIV/AIDS Epidemiology Annual Report 2002

HIV/AIDS Statistics & Epidemiology Section



**SAN FRANCISCO**  
**DEPARTMENT OF PUBLIC HEALTH**

**HIV/AIDS EPIDEMIOLOGY**  
**ANNUAL REPORT**

**2002**



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# Executive Summary

The number of new AIDS cases in San Francisco continues to decline from its peak in 1992. The decline is due to both changes in HIV transmission, which peaked in 1982, and to improvements in treatment for HIV infection which have delayed the time between HIV infection and the development of AIDS. Coupled with the decline in new AIDS cases has been a decrease in the number of deaths among persons with AIDS. AIDS deaths first declined in 1995 and then declined dramatically between 1996 and 1997, following wide use of highly active antiretroviral therapies (HAART). The number of new AIDS cases is greater than the number of persons dying from AIDS with the net effect of a growing number of San Franciscans living with AIDS. Of note, the vast majority of deaths among persons with AIDS are due to immunosuppression from HIV infection.

Although treatment improves survival among all demographic and risk populations, not all have benefited to the same extent. Survival has improved less for women and transgendered compared to men and less for African Americans than other race and ethnic groups. Survival is lower among injection drug users compared to those who do not inject drugs. Most of the difference in survival within risk and demographic groups is due to lower use of HAART. The reasons for lower use of HAART in these groups are not well understood and merit close evaluation. The lower survival among injection drug users in part reflects deaths from causes related to drug use such as liver disease and overdose.

Trends in sexual behavior, sexually transmitted diseases, and recent HIV infections suggest continued increases or a sustained elevation in HIV transmission above levels of a few years ago among men who have sex with men (MSM) in San Francisco. Similar data point to lower, stable levels of transmission among injection drug users, and sporadic cases among heterosexuals. We hypothesize that several factors may be contributing to the increases in unsafe sexual behaviors among MSM in recent years. These include improved health from use of HAART among persons with advanced HIV disease resulting in return to sexual activity among previously ill persons, reduced concern over contracting or transmitting HIV, thoughts that persons using HAART may be less infectious than untreated persons, prevention fatigue, and newer venues for meeting sex partners such as the Internet. The impact of drug use, particularly speed, on sexual risk behavior is also an ongoing concern. HIV transmission is also facilitated with the presence of other sexually transmitted diseases such as syphilis and gonorrhea, which continue to rise among MSM in San Francisco. Finally, the improved survival due to HAART results in a longer period of potential infectiousness.

HIV case reporting, using a non-name code, began in July 2002. We hope that in future years HIV case reports will contribute to our ability to track the epidemic. However, it is important to recognize that HIV reporting will only provide a count of persons who have been diagnosed with HIV infection. To include information on undiagnosed persons, we must rely on behavioral surveys, STD surveillance, and community-based HIV prevalence and incidence studies. Nevertheless, having a more complete count of persons diagnosed with HIV infection will help advocate for health and social services for persons living with HIV/AIDS in our city.

# Overview of HIV/AIDS in San Francisco

As of December 31, 2002, a cumulative total of 28,462 AIDS cases were diagnosed in San Francisco (Table 1.1). This comprises 22% of California AIDS cases and three percent of cases reported nationally. As of December 2001, San Francisco ranked third in the cumulative number of AIDS cases among metropolitan areas nationwide. Compared to California and the United States as a whole, AIDS cases in San Francisco are more likely to be male, white, and to occur among men who have sex with men (MSM), including MSM who also inject drugs (MSM IDU).

**Table 1.1** Characteristics of cumulative AIDS cases in San Francisco, California, and the United States<sup>#</sup>

	San Francisco (N = 28,462)	California (N = 128,196)	United States (N = 816,149)
	Number	%	%
<b>Gender</b>			
Male	27,054	95%	92%
Female	1,121	4%	8%
Transgender*	287	1%	—
<b>Race/Ethnicity</b>			
White	20,930	74%	59%
African American	3,508	12%	18%
Latino	3,040	11%	21%
Asian/Pacific Islander	843	3%	2%
Native American	141	<1%	<1%
<b>Exposure Category</b>			
MSM	21,724	76%	69%
IDU	2,032	7%	10%
MSM IDU	3,756	13%	9%
Heterosexual	406	1%	5%
Transfusion/Hemophilia	271	1%	2%
Other/Unidentified	273	1%	5%

# San Francisco data are reported through February 2003 for cases diagnosed through December 2002; California data are reported through December 2002; U.S. data are reported through December 2001.

\* Transgender data are not reported by California and the United States. See Technical Notes "Transgender Status."

In San Francisco, MSM account for the majority of male AIDS cases within all race/ethnic groups (Table 1.2). Among African American men, heterosexual injection drug use is the second most frequent exposure category while MSM IDU represents the second most frequent exposure category among men of all other race/ethnic groups. One percent or less of men acquired their infection through heterosexual contact.

The most frequent exposure category among white, African American, and Native American women with AIDS is injection drug use, followed by heterosexual contact. Among Latinas, almost equal percentage of women acquired their HIV infection through injection drug use and through heterosexual contact. Among Asian/Pacific Islander women, 44% acquired their infection through heterosexual contact, 30% through injection drug use, and 21% through transfusion of blood or blood products.

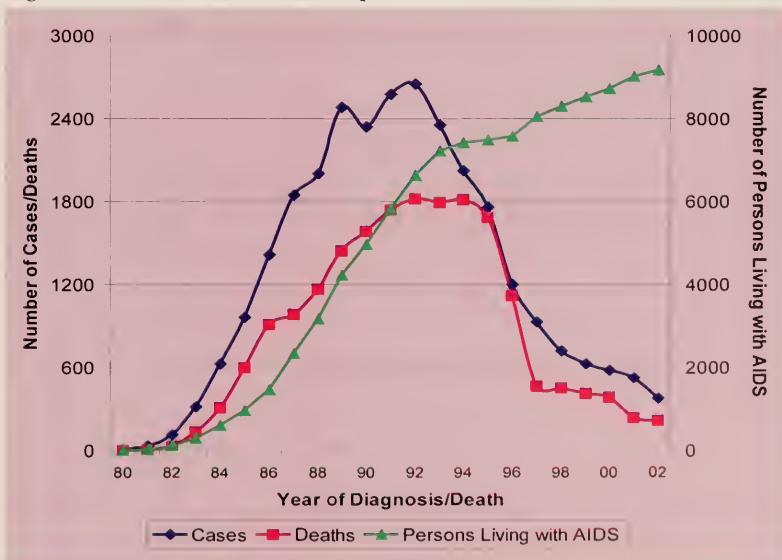
**Table 1.2** Cumulative AIDS cases by gender, exposure category, and race/ethnicity, diagnosed through December 2002, San Francisco

	White Number ( % )	African American Number ( % )	Latino Number ( % )	Asian/Pacific Islander Number ( % )	Native American Number ( % )
<b>Male</b>					
MSM	17,089 ( 84 )	1,598 ( 55 )	2,215 ( 78 )	625 ( 84 )	68 ( 54 )
IDU	494 ( 2 )	675 ( 23 )	173 ( 6 )	21 ( 3 )	11 ( 9 )
MSM IDU	2,650 ( 13 )	538 ( 18 )	324 ( 11 )	48 ( 6 )	45 ( 36 )
Heterosexual	39 ( <1 )	33 ( 1 )	18 ( 1 )	7 ( 1 )	0 ( 0 )
Transfusion/					
Hemophilia	106 ( 1 )	18 ( 1 )	29 ( 1 )	27 ( 4 )	0 ( 0 )
Other/Unidentified	66 ( <1 )	52 ( 2 )	64 ( 2 )	19 ( 3 )	2 ( 2 )
<b>Male Subtotal</b>	<b>20,444</b>	<b>2,914</b>	<b>2,823</b>	<b>747</b>	<b>126</b>
<b>Female</b>					
IDU	221 ( 56 )	339 ( 68 )	61 ( 42 )	21 ( 30 )	11 ( 92 )
Heterosexual	111 ( 28 )	107 ( 22 )	57 ( 40 )	31 ( 44 )	1 ( 8 )
Transfusion/					
Hemophilia	46 ( 12 )	17 ( 3 )	13 ( 9 )	15 ( 21 )	0 ( 0 )
Other/Unidentified	20 ( 5 )	34 ( 7 )	13 ( 9 )	3 ( 4 )	0 ( 0 )
<b>Female Subtotal</b>	<b>398</b>	<b>497</b>	<b>144</b>	<b>70</b>	<b>12</b>
<b>Transgender</b>	<b>88</b>	<b>97</b>	<b>73</b>	<b>#</b>	<b>#</b>

# There were a total of 29 transgender persons of Asian/Pacific Islander and Native American race/ethnicity. The number of transgender Native Americans with AIDS was less than five.

The number of new AIDS cases diagnosed in San Francisco peaked in 1992 at 2,649, reflecting the peak of new HIV cases in 1982 (Figure 1.1). Deaths among persons with AIDS reached a plateau between 1992 and 1994, and declined thereafter. The sharpest decline in AIDS deaths occurred between 1995 and 1997, reflecting the impact of highly active antiretroviral therapies. By the end of 2002, there were 9,167 persons living with AIDS in San Francisco. Of note, mortality data for 2001 and 2002 are not yet complete. Additionally, there may be reporting delay for AIDS cases that were diagnosed in recent years.

**Figure 1.1 AIDS cases, deaths, and prevalence, San Francisco, 1980-2002**

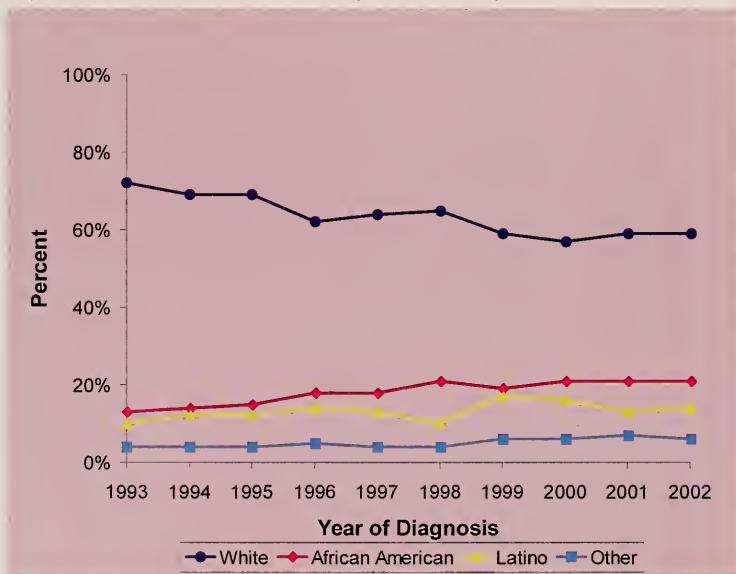


# Trends in AIDS Incidence

## Race/ethnicity

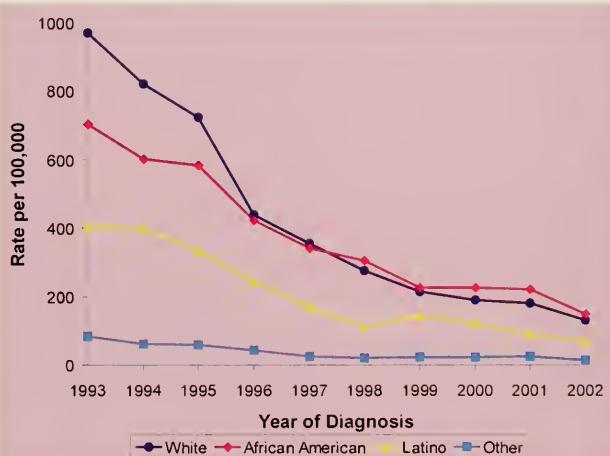
AIDS cases in San Francisco have occurred predominantly among whites (Figure 2.1). However, the proportion of AIDS cases among non-whites, particularly African Americans, had been increasing since 1993 until between 2000 and 2002 when the race/ethnic distribution of AIDS cases became relatively stable.

Figure 2.1 Percent of AIDS cases by race/ethnicity, San Francisco, 1993-2002



The incidence rate of AIDS among men of all race/ethnic groups has declined through 2002 (Figure 2.2). In 1998, the incidence rate of AIDS among African American men first exceeded that of white men and that difference has persisted through 2002. In 2002, the incidence rate of AIDS per 100,000 population was 149 among African American men, 132 among white men, and 71 among Latino men.

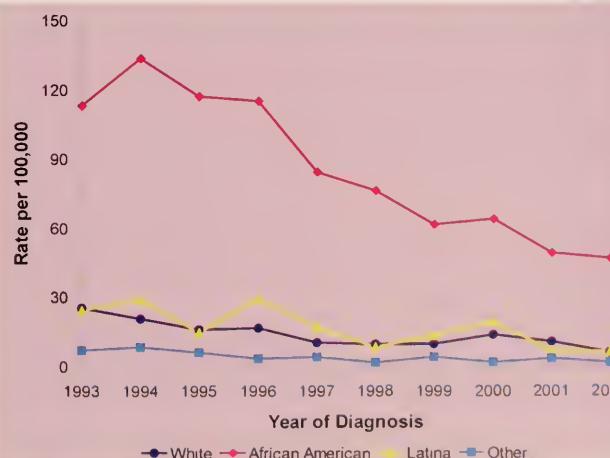
**Figure 2.2** Male annual AIDS incidence rates\* per 100,000 population by race/ethnicity, San Francisco, 1993-2002



\* Excludes male-to-female transgender AIDS cases. See Technical Notes "Transgender Status" and "AIDS Incidence Rates" for rate calculations.

Among women, the incidence rate of AIDS peaked in 1994 (Figure 2.3). Compared to other women, African American women have been disproportionately affected by AIDS throughout the epidemic. Although the incidence rate among African American women has declined from 63 per 100,000 in 2000 to 46 per 100,000 in 2002, it remains substantially higher than the rates among women of other races and ethnicities.

**Figure 2.3** Female annual AIDS incidence rates\* per 100,000 population by race/ethnicity, San Francisco, 1993-2002

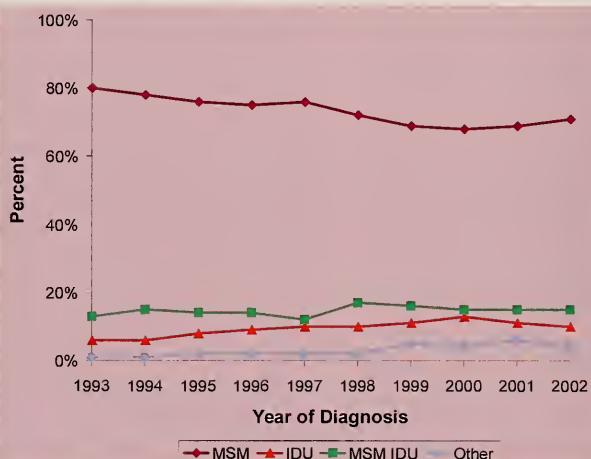


\* Excludes female-to-male transgender AIDS cases. See Technical Notes "Transgender Status" and "AIDS Incidence Rates" for rate calculations.

## Exposure category

The greatest proportion of male AIDS cases has occurred among MSM (Figure 2.4). The percent of AIDS cases among MSM has been stable at approximately 70% between 1999 and 2002. MSM IDU accounted for 15% of AIDS cases between 2000 and 2002. The proportion of male heterosexual IDU AIDS cases increased between 1993 and 2000 with a slight decrease thereafter.

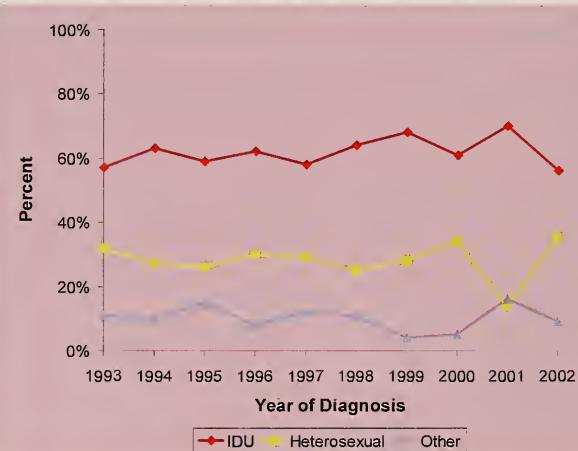
Figure 2.4 Percent of male AIDS cases\* by exposure category, San Francisco, 1993-2002



\* Excludes male-to-female transgender AIDS cases. See Technical Notes "Transgender Status."

The predominant exposure category of AIDS cases among women is injection drug use, followed by heterosexual transmission (Figure 2.5). Fluctuations in data for recent years may be the result of small numbers of cases overall.

Figure 2.5 Percent of female AIDS cases\* by exposure category, San Francisco, 1993-2002



\* Excludes female-to-male transgender AIDS cases. See Technical Notes "Transgender Status."

**Age**

The largest number of men and women with AIDS were diagnosed between ages 30 and 39 years (Table 2.1). AIDS has been diagnosed more frequently among younger women (aged 20-29 years) than among younger men. There is a small increase in the percentage of men and women diagnosed with AIDS in the older age groups (over 40 years) in recent years. This likely reflects the use of more effective therapies which have extended the time from acquiring HIV infection to the development of AIDS.

Table 2.1 AIDS cases by gender\* and age at diagnosis, diagnosed 1993-2002, and cumulative totals through December 2002, San Francisco

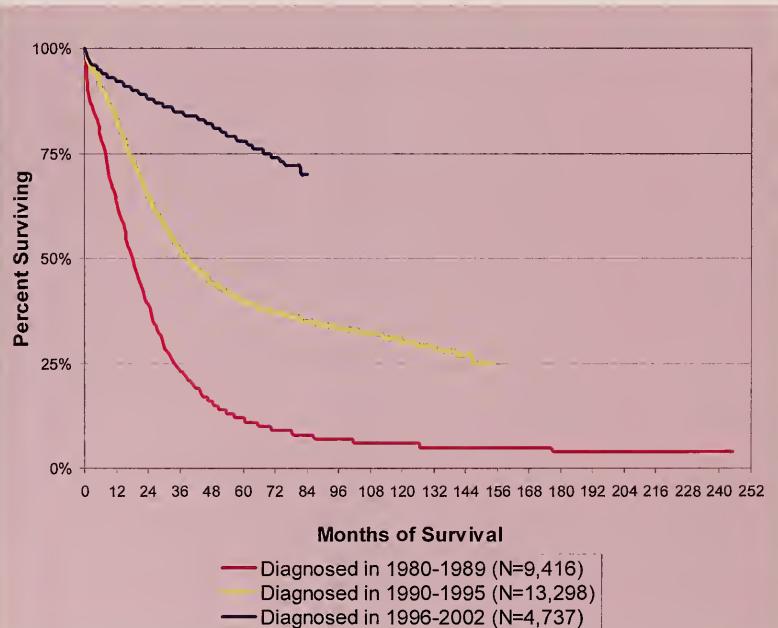
	1993-1995 Number (%)	1996-1998 Number (%)	1999-2002 Number (%)	Cumulative Totals Number (%)
<b>Male</b>				
0 - 19	13 ( <1 )	6 ( <1 )	9 ( <1 )	67 ( <1 )
20 - 29	622 ( 11 )	260 ( 10 )	142 ( 8 )	3,102 ( 11 )
30 - 39	2,563 ( 44 )	1,097 ( 43 )	770 ( 41 )	12,396 ( 46 )
40 - 49	1,900 ( 33 )	852 ( 33 )	635 ( 34 )	8,385 ( 31 )
50+	665 ( 12 )	352 ( 14 )	300 ( 16 )	3,104 ( 11 )
<b>Male Subtotal</b>	<b>5,763 ( 100 )</b>	<b>2,567 ( 100 )</b>	<b>1,856 ( 100 )</b>	<b>27,054 ( 100 )</b>
<b>Female</b>				
0 - 19	6 ( 2 )	8 ( 4 )	3 ( 2 )	37 ( 3 )
20 - 29	44 ( 14 )	31 ( 15 )	27 ( 14 )	169 ( 15 )
30 - 39	129 ( 42 )	77 ( 36 )	69 ( 36 )	446 ( 40 )
40 - 49	96 ( 31 )	74 ( 35 )	64 ( 33 )	319 ( 28 )
50+	30 ( 10 )	21 ( 10 )	29 ( 15 )	150 ( 13 )
<b>Female Subtotal</b>	<b>305 ( 100 )</b>	<b>211 ( 100 )</b>	<b>192 ( 100 )</b>	<b>1,121 ( 100 )</b>

\* Excludes transgender cases. We cannot analyze temporal trends in AIDS cases by transgender status. This information was first collected in September 1996. See Technical Notes "Transgender Status."

# Survival among Persons with AIDS

These Kaplan-Meier curves demonstrate the improved survival for persons diagnosed with AIDS in more recent years (Figure 3.1). Survival was poor for persons diagnosed early in the AIDS epidemic (1980-1989) (median survival of 18 months). However, survival has improved since then and for persons diagnosed between 1990 and 1995 the median survival was over three years (39 months). Approximately 70% of persons diagnosed with AIDS between 1996 and 2002 are still living. Improvements in survival with AIDS are attributable to more effective antiretroviral therapies.

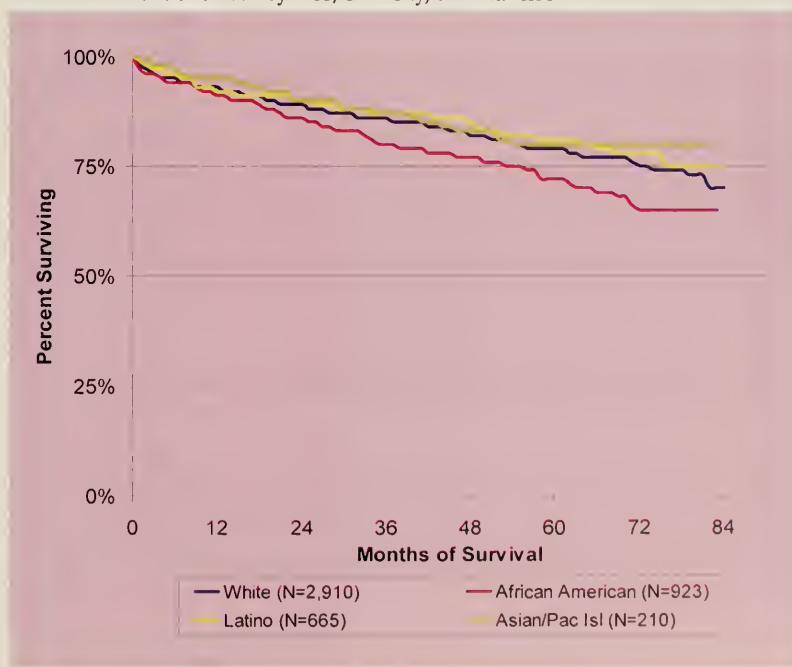
**Figure 3.1** Kaplan-Meier survival\* curves for persons diagnosed with AIDS in 1980-1989, 1990-1995, and 1996-2002, San Francisco



\* See Technical Notes "AIDS Survival."

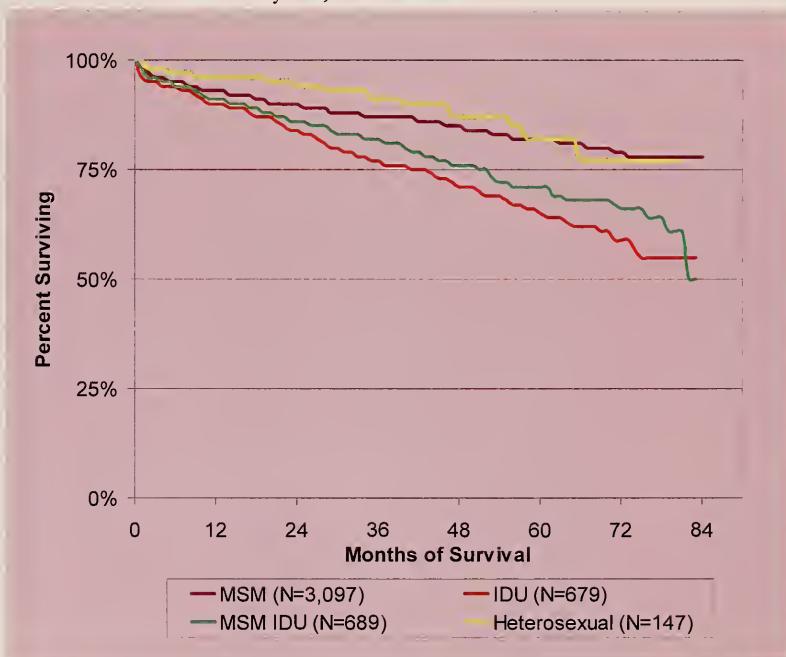
Although survival has improved in recent years for all racial and ethnic groups, relatively worse survival among African Americans has persisted (Figure 3.2). Among persons diagnosed between 1996 and 2002, the percent of African Americans surviving 72 months (six years) was 65%, compared to 75% of whites, 78% of Latinos, and 80% of Asians/Pacific Islanders. Although the survival differences are due in part to lower use of highly active antiretroviral therapies, the reasons for these differences are not well understood.

Figure 3.2 Kaplan-Meier survival curves for persons diagnosed with AIDS between 1996 and 2002 by race/ethnicity, San Francisco



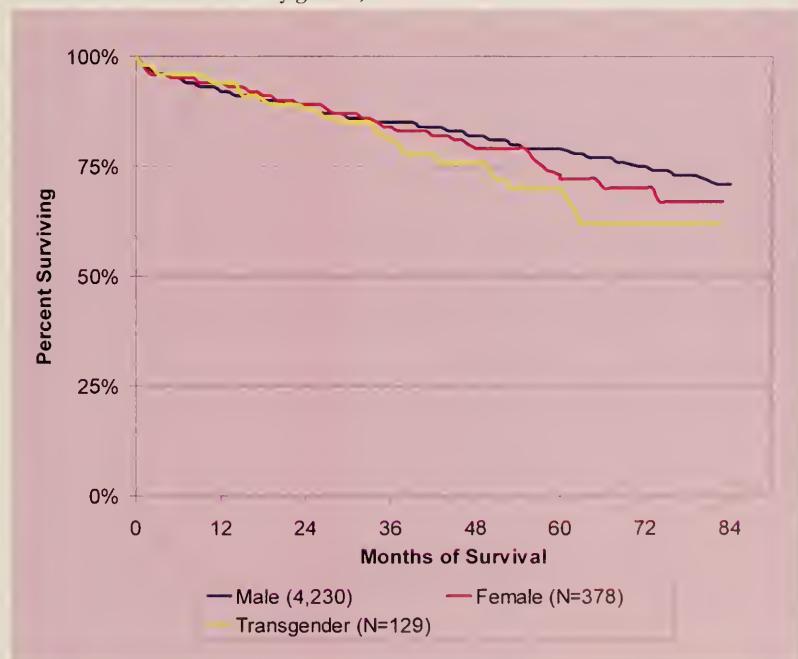
Survival has been better for MSM and heterosexuals than for MSM IDU and heterosexual IDU (Figure 3.3). Eighty-two percent of MSM and heterosexuals survived 60 months (five years) after their AIDS diagnosis, compared to only 71% of MSM IDU and 65% of other IDU. Worse survival among IDU partly reflects higher death rates from causes associated with drug use such as overdose and suicide.

Figure 3.3 Kaplan-Meier survival curves for persons diagnosed with AIDS between 1996 and 2002 by risk, San Francisco



Seventy-nine percent of men, 73% of women, and 70% of transgender survived 60 months (five years) after AIDS diagnosis (Figure 3.4). Although these differences are not statistically significant, they are consistent with lower use of HAART among women and transgenders compared to men.

Figure 3.4 Kaplan-Meier survival curves for persons diagnosed with AIDS between 1996 and 2002 by gender, San Francisco



# Trends in AIDS Mortality

A total of 19,305 AIDS deaths have occurred in San Francisco as of December 31, 2002 (Table 4.1). The number of AIDS deaths declined between 1999 and 2002, although reporting of deaths in 2001 and 2002 is not yet complete.

Table 4.1 Deaths in persons with AIDS, by gender, race/ethnicity, and risk, San Francisco, 1999-2002

	Year of Death				Cumulative Totals as of 12/31/2002	
	1999	2000	2001*	2002*		
Gender	Number	( % )	Number	( % )	Number	( % )
Male	362	( 89 )	342	( 90 )	209	( 89 )
Female	39	( 10 )	28	( 7 )	16	( 7 )
Transgender	8	( 2 )	12	( 3 )	11	( 5 )
					8	( 4 )
						137
<b>Race/Ethnicity</b>						
White	258	( 63 )	250	( 65 )	165	( 70 )
African American	93	( 23 )	84	( 22 )	42	( 18 )
Latino	41	( 10 )	32	( 8 )	22	( 9 )
Other	17	( 4 )	16	( 4 )	7	( 3 )
					8	( 4 )
						559
<b>Risk</b>						
MSM	236	( 58 )	230	( 60 )	136	( 58 )
IDU	75	( 18 )	54	( 14 )	41	( 17 )
MSM/IDU	88	( 22 )	79	( 21 )	53	( 22 )
Heterosexual	6	( 1 )	6	( 2 )	2	( 1 )
Other/Unidentified	4	( 1 )	13	( 3 )	4	( 2 )
					4	( 2 )
<b>Total</b>	<b>409</b>	<b>(100)</b>	<b>382</b>	<b>(100)</b>	<b>236</b>	<b>(100)</b>
					<b>213</b>	<b>(100)</b>
						<b>19,305</b>

\* Data are incomplete due to reporting delay. In addition, deaths that occurred outside of San Francisco are primarily identified through the match with the National Death Index (NDI) which is complete only through 2000.

The trend in death rates in persons with AIDS was examined by their underlying cause of death. The death rate due to HIV/AIDS-related causes plateaued between 1993 and 1995, decreased from 16 per 100 persons with AIDS in 1995 to 3 per 100 persons with AIDS in 1998, and has remained at this rate through 2000 (Figure 4.1). The death rate due to non-HIV/AIDS-related causes has declined slightly in recent years; in 2000, the rate of non-HIV/AIDS-related causes was 1.1 per 100 persons with AIDS.

Figure 4.1 Death rates\* due to HIV/AIDS-related and non-HIV/AIDS-related causes among persons with AIDS, San Francisco, 1993-2000



\* Death rates are calculated as the number of persons with AIDS who died each year divided by the number of total AIDS cases for that year. See Technical Notes for "Causes of Death."

The proportion of deaths in which HIV/AIDS was listed as an underlying cause of death decreased from 88% of AIDS deaths occurring between 1993 and 1995 to 72% in 1999-2000 (Table 4.2). Other frequently cited underlying causes of death in 1999-2000 include non-AIDS cancer (6.4%), heart disease (4.1%), drug overdose (2.7%), suicide (2.4%), and liver disease (1.8%). The proportion of persons with AIDS who died of these non-HIV/AIDS-related conditions increased over time. Although infrequent, cardiomyopathy was listed as a cause of death in 1.3% of deaths in 1999-2000 compared to less than 0.3% of deaths in earlier years. This may reflect an increase in deaths from HAART-related cardiomyopathy.

Table 4.2 Underlying causes of death among persons with AIDS, San Francisco, 1993-2000

Underlying Cause of Death*	Year of Death		
	1993-1995		1996-1998
	N = 4,793	N = 2,000	N = 779
HIV/AIDS	4,194 ( 87.5 )	1,522 ( 76.1 )	560 ( 71.9 )
Non-AIDS cancer	67 ( 1.4 )	74 ( 3.7 )	50 ( 6.4 )
Lung cancer	21 ( 0.4 )	18 ( 0.9 )	14 ( 1.8 )
Liver cancer	3 ( 0.1 )	11 ( 0.6 )	13 ( 1.7 )
Anal cancer	0 ( 0.0 )	4 ( 0.2 )	6 ( 0.8 )
Heart disease	53 ( 1.1 )	46 ( 2.3 )	32 ( 4.1 )
Coronary heart disease	18 ( 0.4 )	19 ( 1.0 )	16 ( 2.1 )
Cardiomyopathy	3 ( 0.1 )	5 ( 0.3 )	10 ( 1.3 )
Drug overdose	35 ( 0.7 )	41 ( 2.1 )	21 ( 2.7 )
Suicide	44 ( 0.9 )	24 ( 1.2 )	19 ( 2.4 )
Liver disease	42 ( 0.9 )	22 ( 1.1 )	14 ( 1.8 )
Alcoholic liver disease	8 ( 0.2 )	12 ( 0.6 )	7 ( 0.9 )
Liver cirrhosis	13 ( 0.3 )	6 ( 0.3 )	6 ( 0.8 )
Chronic obstructive lung disease	18 ( 0.4 )	11 ( 0.6 )	10 ( 1.3 )
Viral hepatitis	53 ( 1.1 )	51 ( 2.6 )	9 ( 1.2 )

\* See Technical Notes "Causes of Death."

Table 4.3 summarizes both underlying and contributory causes of death among persons with AIDS. Although persons with AIDS predominantly died of HIV/AIDS-related causes, the increasing proportion of deaths due to non-HIV/AIDS-related causes suggests that certain high prevalent risk behaviors in this population are playing an important role in mortality trends. Co-infection with HIV and hepatitis viruses may be related to deaths associated with liver disease, viral hepatitis, and liver cancer. Smoking may be related to deaths associated with lung cancer, obstructive lung disease, and coronary heart disease. Use of illicit drugs contributes to deaths due to drug overdoses and mental disorders due to substance use.

Table 4.3    Multiple causes of death among persons with AIDS, San Francisco, 1993-2000

Multiple Causes of Death*	Year of Death		
	1993-1995		1996-1998
	N = 4,793	N = 2,000	N = 779
HIV/AIDS	4,588 ( 95.7 )	1,812 ( 90.6 )	659 ( 84.6 )
Heart disease	755 ( 15.8 )	326 ( 16.3 )	144 ( 18.5 )
Coronary heart disease	32 ( 0.7 )	36 ( 1.8 )	30 ( 3.9 )
Cardiomyopathy	50 ( 1.0 )	31 ( 1.6 )	23 ( 3.0 )
Pneumonia	792 ( 16.5 )	288 ( 14.4 )	116 ( 14.9 )
Liver disease	248 ( 5.2 )	159 ( 8.0 )	106 ( 13.6 )
Liver cirrhosis	63 ( 1.3 )	56 ( 2.8 )	32 ( 4.1 )
Alcoholic liver disease	16 ( 0.3 )	18 ( 0.9 )	9 ( 1.2 )
Viral hepatitis	95 ( 2.0 )	94 ( 4.7 )	79 ( 10.1 )
Non-AIDS cancer	274 ( 5.7 )	150 ( 7.5 )	76 ( 9.8 )
Lung cancer	22 ( 0.5 )	22 ( 1.1 )	17 ( 2.2 )
Liver cancer	4 ( 0.1 )	13 ( 0.7 )	17 ( 2.2 )
Anal cancer	1 ( 0.0 )	6 ( 0.3 )	9 ( 1.2 )
Septicemia	300 ( 6.3 )	151 ( 7.6 )	72 ( 9.2 )
Renal disease	169 ( 3.5 )	103 ( 5.2 )	54 ( 6.9 )
Drug overdose	40 ( 0.8 )	50 ( 2.5 )	30 ( 3.9 )
Mental disorders due to substance use	45 ( 0.9 )	58 ( 2.9 )	30 ( 3.9 )
Chronic obstructive lung disease	53 ( 1.1 )	39 ( 2.0 )	25 ( 3.2 )
Cerebrovascular disease	66 ( 1.4 )	32 ( 1.6 )	24 ( 3.1 )
Suicide	44 ( 0.9 )	24 ( 1.2 )	19 ( 2.4 )
Aspergillosis	73 ( 1.5 )	50 ( 2.5 )	16 ( 2.1 )

\* Includes underlying and contributory causes of death. Individuals may have more than one cause of death. See Technical Notes "Causes of Death".

# Persons Living with AIDS

Although the annual number of new AIDS cases has decreased since 1992, ongoing incidence of AIDS coupled with the increase in survival after AIDS has resulted in an increasing number of persons living with AIDS. As of December 31, 2002, there were 9,167 persons living with AIDS in San Francisco (Table 5.1). The demographic and risk characteristics of persons living with AIDS have remained relatively stable between 1999 and 2002; most are male, white, aged 40-49 years, and MSM (including MSM IDU). Of note, three quarters of persons living with AIDS are over 40 years old and 30% are over 50.

Table 5.1 Persons living with AIDS by demographic and risk characteristics, San Francisco, 1999-2002<sup>#</sup>

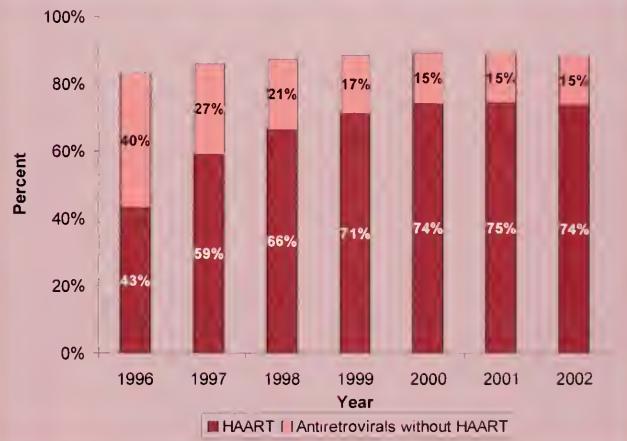
	1999	2000	2001	2002
	Number (%)	Number (%)	Number (%)	Number (%)
<b>Gender</b>				
Male	7,891 ( 93 )	8,050 ( 92 )	8,307 ( 92 )	8,451 ( 92 )
Female	486 ( 6 )	519 ( 6 )	547 ( 6 )	566 ( 6 )
Transgender	142 ( 2 )	147 ( 2 )	149 ( 2 )	150 ( 2 )
<b>Race/Ethnicity</b>				
White	5,847 ( 69 )	5,928 ( 68 )	6,072 ( 67 )	6,164 ( 67 )
African American	1,222 ( 14 )	1,258 ( 14 )	1,326 ( 15 )	1,359 ( 15 )
Latino	1,088 ( 13 )	1,150 ( 13 )	1,195 ( 13 )	1,219 ( 13 )
Asian/Pacific Islander	310 ( 4 )	328 ( 4 )	356 ( 4 )	370 ( 4 )
Native American	52 ( 1 )	52 ( 1 )	54 ( 1 )	55 ( 1 )
<b>Age (at end of each year)</b>				
0 - 19	30 ( <1 )	32 ( <1 )	32 ( <1 )	30 ( <1 )
20 - 29	265 ( 3 )	223 ( 3 )	200 ( 2 )	171 ( 2 )
30 - 39	2,711 ( 32 )	2,579 ( 30 )	2,345 ( 26 )	2,081 ( 23 )
40 - 49	3,615 ( 42 )	3,734 ( 43 )	3,976 ( 44 )	4,091 ( 45 )
50+	1,898 ( 22 )	2,148 ( 25 )	2,450 ( 27 )	2,794 ( 30 )
<b>Exposure Category</b>				
MSM	6,240 ( 73 )	6,356 ( 73 )	6,548 ( 73 )	6,677 ( 73 )
IDU	790 ( 9 )	838 ( 10 )	877 ( 10 )	890 ( 10 )
MSM IDU	1,140 ( 13 )	1,146 ( 13 )	1,169 ( 13 )	1,173 ( 13 )
Heterosexual	183 ( 2 )	204 ( 2 )	217 ( 2 )	229 ( 2 )
Transfusion/Hemophilia	56 ( 1 )	52 ( 1 )	52 ( 1 )	53 ( 1 )
Other/Unidentified	110 ( 1 )	120 ( 1 )	140 ( 2 )	145 ( 2 )
<b>Total</b>	<b>8,519</b>	<b>8,716</b>	<b>9,003</b>	<b>9,167</b>

# Persons living with AIDS at the end of each year.

# Use of HAART among Persons Living with AIDS

The proportion of persons living with AIDS who received highly active antiretroviral therapies (HAART) increased substantially from 43% in 1996 to 74% in 2000 (Figure 6.1). From 2000 to 2002, the proportion receiving any antiretroviral therapy or HAART has been relatively stable. By the end of 2002, 89% of persons living with AIDS had received some type of antiretroviral therapy and 74% were noted to have received HAART.

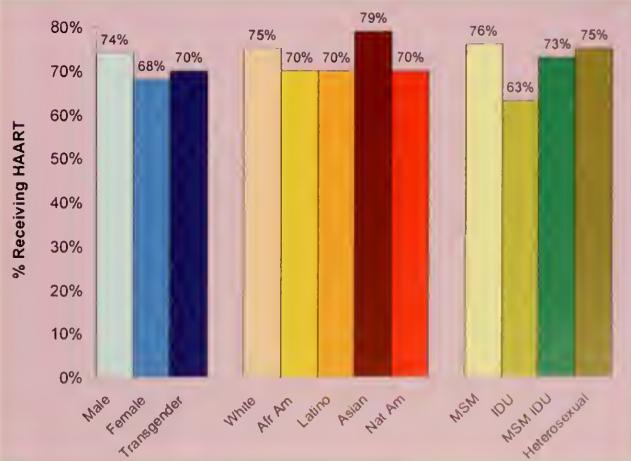
Figure 6.1 Use of HIV antiretrovirals\* and HAART among persons living with AIDS, San Francisco, 1996-2002



\* See Technical Notes "Treatments."

As of December 2002, a greater percent of men have used HAART than women or transgender persons (Figure 6.2). Use of HAART was higher among Asians/Pacific Islanders (79%) and whites (75%) compared to African Americans, Latinos, and Native Americans (70%). HAART use was more common among MSM and heterosexuals with AIDS than among heterosexual and homosexual injection drug users.

Figure 6.2 Use of HAART among persons living with AIDS by gender, race/ethnicity, and risk, San Francisco, December 2002



# Insurance Status at Time of AIDS Diagnosis

Insurance status at the time of AIDS diagnosis differs by gender. Of those diagnosed with AIDS between 1997 and 2002, 42% of men had private insurance at the time of AIDS diagnosis compared to only 17% of women and 11% of transgenders (Figure 7.1). The majority of transgender persons with AIDS did not have health insurance at the time of diagnosis. The proportion of men and women without health insurance at the time of AIDS diagnosis increased in 2002 compared to 2001 (Figure 7.2). Forty percent of men, 44% of women and transgender persons diagnosed with AIDS in 2002 did not have health insurance at the time of diagnosis.

Figure 7.1 AIDS cases by gender and insurance status at diagnosis, San Francisco, 1997-2002

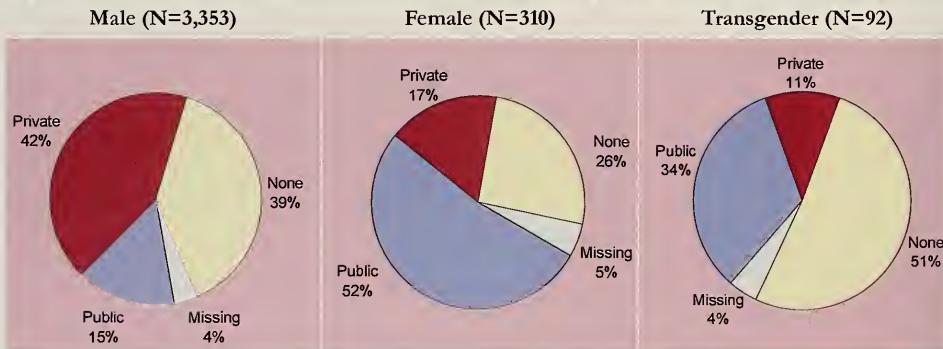
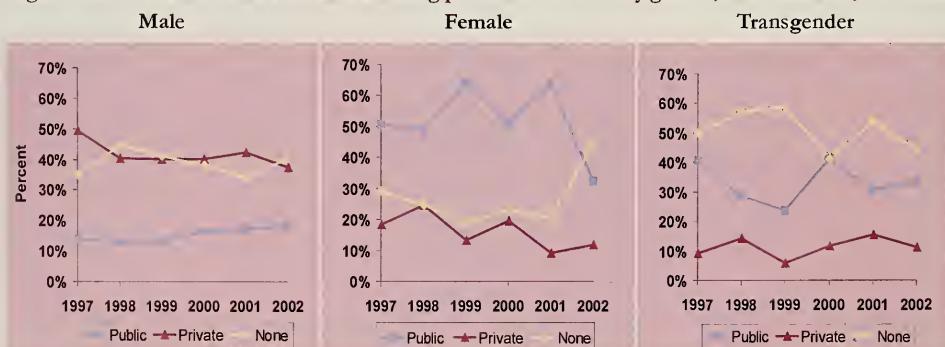


Figure 7.2 Trends in insurance status among persons with AIDS by gender, San Francisco, 1997-2002



# AIDS Opportunistic Illnesses

The number of AIDS opportunistic illnesses (OIs) diagnosed each year has declined substantially between 1998 and 2002 (Table 8.1). Much of the decrease in OIs is due to immune reconstitution associated with use of highly active antiretroviral therapy. *Mycobacterium avium complex* (MAC) diagnoses have declined between 1998 and 2000 but have increased slightly since for reasons that are not yet clear. Despite their lower numbers, *Pneumocystis carinii* pneumonia and cryptococcosis were the most frequently diagnosed OIs in 2002.

Table 8.1 Number of AIDS opportunistic illnesses\* diagnosed between 1998 and 2002, San Francisco

AIDS Indicator Condition	1998 Number (%)	1999 Number (%)	2000 Number (%)	2001 Number (%)	2002 Number (%)
Candidiasis, bronchi, trachea, or lungs	3 ( 0.3 )	9 ( 1.1 )	0 ( 0.0 )	4 ( 0.7 )	3 ( 0.9 )
Candidiasis, esophageal	62 ( 6.9 )	62 ( 7.7 )	81 ( 10.3 )	38 ( 6.2 )	22 ( 6.8 )
Cervical cancer	0 ( 0.0 )	1 ( 0.1 )	1 ( 0.1 )	0 ( 0.0 )	0 ( 0.0 )
Coccidioidomycosis, disseminated or extrapulmonary	2 ( 0.2 )	2 ( 0.2 )	1 ( 0.1 )	1 ( 0.2 )	0 ( 0.0 )
Cryptococcosis, extrapulmonary	44 ( 4.9 )	34 ( 4.2 )	26 ( 3.3 )	41 ( 6.7 )	34 ( 10.5 )
Cryptosporidiosis, chronic intestinal	35 ( 3.9 )	34 ( 4.2 )	24 ( 3.1 )	13 ( 2.1 )	11 ( 3.4 )
Cytomegalovirus disease (CMV)	25 ( 2.8 )	30 ( 3.7 )	22 ( 2.8 )	17 ( 2.8 )	7 ( 2.2 )
Cytomegalovirus retinitis	47 ( 5.2 )	36 ( 4.4 )	29 ( 3.7 )	19 ( 3.1 )	7 ( 2.2 )
HIV encephalopathy	67 ( 7.4 )	64 ( 7.9 )	47 ( 6.0 )	35 ( 5.7 )	14 ( 4.3 )
Herpes simplex	10 ( 1.1 )	5 ( 0.6 )	10 ( 1.3 )	9 ( 1.5 )	3 ( 0.9 )
Histoplasmosis, disseminated or extrapulmonary	3 ( 0.3 )	1 ( 0.1 )	5 ( 0.6 )	1 ( 0.2 )	0 ( 0.0 )
Isosporiasis, chronic intestinal	1 ( 0.1 )	2 ( 0.2 )	1 ( 0.1 )	1 ( 0.2 )	3 ( 0.9 )
Kaposi's sarcoma	71 ( 7.9 )	63 ( 7.8 )	67 ( 8.6 )	50 ( 8.2 )	20 ( 6.2 )
Lymphoma, Burkitt's	17 ( 1.9 )	7 ( 0.9 )	10 ( 1.3 )	7 ( 1.1 )	6 ( 1.9 )
Lymphoma, immunoblastic	24 ( 2.7 )	23 ( 2.8 )	31 ( 4.0 )	22 ( 3.6 )	11 ( 3.4 )
Lymphoma, primary in brain	5 ( 0.6 )	5 ( 0.6 )	6 ( 0.8 )	4 ( 0.7 )	2 ( 0.6 )
Mycobacterium avum complex (MAC)	60 ( 6.7 )	52 ( 6.4 )	38 ( 4.9 )	43 ( 7.1 )	22 ( 6.8 )
Mycobacterium tuberculosis, disseminated or extrapulmonary	8 ( 0.9 )	6 ( 0.7 )	7 ( 0.9 )	3 ( 0.5 )	9 ( 2.8 )
Mycobacterium tuberculosis, pulmonary	28 ( 3.1 )	28 ( 3.5 )	10 ( 1.3 )	17 ( 2.8 )	20 ( 6.2 )
Mycobacterium, other species	1 ( 0.1 )	7 ( 0.9 )	6 ( 0.8 )	7 ( 1.1 )	1 ( 0.3 )
Pneumocystis carinii pneumonia (PCP)	184 ( 20.4 )	149 ( 18.4 )	155 ( 19.8 )	135 ( 22.2 )	75 ( 23.2 )
Pneumonia, recurrent	52 ( 5.8 )	59 ( 7.3 )	49 ( 6.3 )	36 ( 5.9 )	23 ( 7.1 )
Progressive multifocal leukoencephalopathy	7 ( 0.8 )	6 ( 0.7 )	5 ( 0.6 )	3 ( 0.5 )	0 ( 0.0 )
Salmonella sepsis, recurrent	0 ( 0.0 )	0 ( 0.0 )	0 ( 0.0 )	0 ( 0.0 )	0 ( 0.0 )
Toxoplasmosis of brain	12 ( 1.3 )	10 ( 1.2 )	10 ( 1.3 )	7 ( 1.1 )	2 ( 0.6 )
Wasting syndrome	134 ( 14.9 )	115 ( 14.2 )	142 ( 18.1 )	96 ( 15.8 )	28 ( 8.7 )
<b>Total</b>	<b>902 ( 100 )</b>	<b>810 ( 100 )</b>	<b>783 ( 100 )</b>	<b>609 ( 100 )</b>	<b>323 ( 100 )</b>

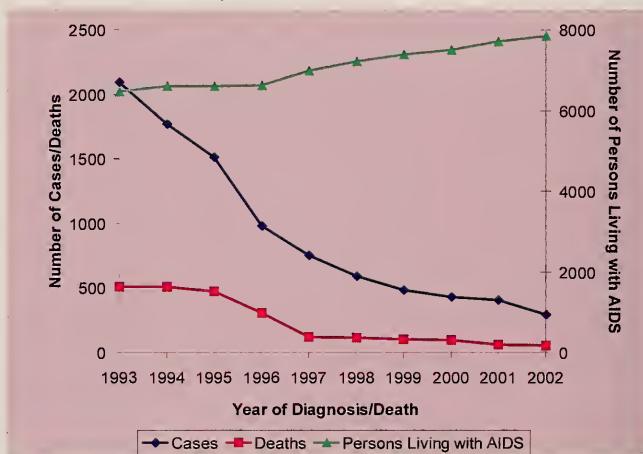
\* A person may have more than one opportunistic illness diagnosed during the same or different year. Data are provisional for opportunistic illnesses diagnosed in recent years.

# HIV/AIDS among Men Who Have Sex with Men

## AIDS surveillance data

While the number of new AIDS cases and AIDS deaths among MSM has declined markedly since 1993, the number of MSM living with AIDS continues to increase (Figure 9.1). This is due in part to improved treatment for persons with AIDS. In 2002, there were 7,850 MSM living with AIDS in San Francisco.

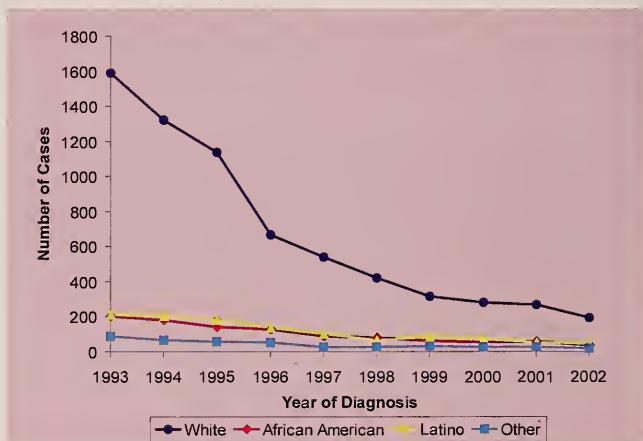
Figure 9.1 AIDS cases, deaths, and prevalence among MSM\*, San Francisco, 1993-2002



\* Includes MSM and MSM-IDU.

The majority of San Francisco AIDS cases have occurred among white MSM (Figure 9.2). Although the number of AIDS cases has declined among all MSM, whites still accounted for the greatest number of MSM AIDS cases followed by Latino MSM.

Figure 9.2 AIDS cases among MSM\* by race/ethnicity, San Francisco, 1993-2002



\* Includes MSM and MSM-IDU.

## Sexual risk behavior data

### Stop AIDS Project

The Stop AIDS Project collects information on sexual behavior and HIV serostatus through the course of their outreach HIV prevention activities for MSM in San Francisco. Their data provide an opportunity to track annual trends in HIV-related risk behavior in a large, community-recruited sample of MSM.

Figure 9.3 illustrates trends in unprotected anal intercourse from 1998 through 2002 by self-reported HIV serostatus. An overall trend of increasing unprotected anal intercourse is apparent for the whole time period. There is an encouraging decrease in risk in 2002. Whether this trend is sustained in the future will bear close attention. Figure 9.3 also illustrates that unprotected anal intercourse is most commonly reported by HIV-positive MSM, followed by HIV-negative men. The lowest level of unprotected anal sex is reported by MSM who do not know or decline to report their HIV serostatus. Trends in unprotected anal intercourse with multiple partners (Figure 9.4) show a similar pattern.

Figure 9.3 Percent of MSM reporting unprotected anal intercourse by self-reported HIV status in the last six months, the Stop AIDS Project, San Francisco, 1998-2002

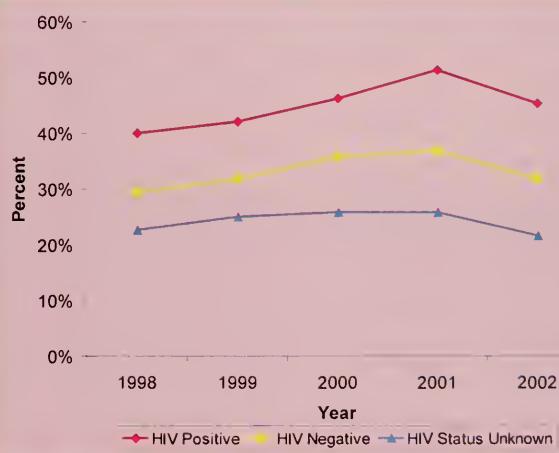


Figure 9.4 Percent of MSM reporting unprotected anal intercourse with multiple partners by self-reported HIV status in the last six months, the Stop AIDS Project, San Francisco, 1998-2002

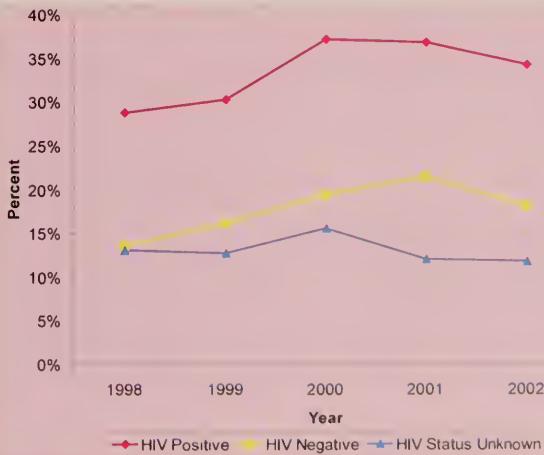


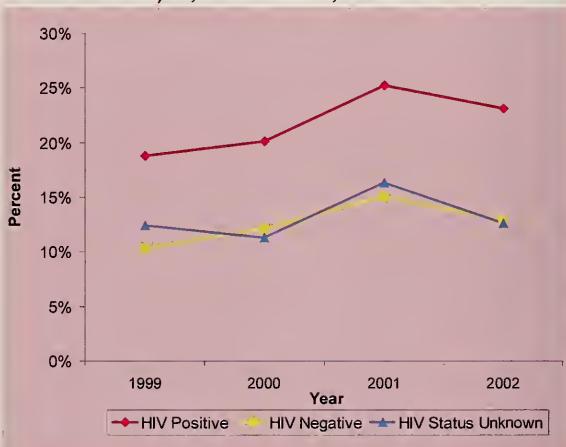
Figure 9.5 shows the proportion of MSM who report having unprotected anal intercourse with two or more sex partners whose serostatus was not known to them. This measure most closely gauges the potential for HIV transmission to occur by excluding sex between individuals known to be of the same HIV serostatus. Between 1999 and 2002 there was an overall rise in unprotected anal intercourse among potentially HIV serodiscordant men. For all years, HIV-positive MSM report a higher number of unprotected sexual encounters with partners whose HIV serostatus was not known to them.

#### HIV Testing Survey

Sexual behaviors among MSM are also derived from the HIV Testing Survey (see Technical Notes). Participants were recruited from gay bars in San Francisco during 2001. Receptive anal sex in the past 12 months was reported by 66% of the men and 64% of these did not use a condom (Table 9.1). Insertive anal sex was reported by 78% of the men, of whom 59% did not use condoms and 18% said that they withdrew from their partner prior to ejaculation as a method to prevent transmission of HIV.

Nine percent of the MSM had exchanged sex for money or drugs, 39% said that they had met a sex partner through the Internet, 49% had been tested for an STD, and 24% reported using Viagra in the past 12 months.

**Figure 9.5** Percent of MSM reporting unprotected anal intercourse with at least two partners of unknown HIV status\* in the last six months, the Stop AIDS Project, San Francisco, 1999-2002



\* For MSM who did not know or report their HIV serostatus, any unprotected anal intercourse was considered potentially serodiscordant.

**Table 9.1** Sexual behaviors\* among MSM, the HIV Testing Survey, San Francisco

	Number	%
<b>Total number participants<sup>#</sup></b>	<b>116</b>	
<b>Receptive anal sex</b>	<b>77</b>	<b>66%</b>
Unprotected receptive anal sex	49	64%
<b>Insertive anal sex</b>	<b>91</b>	<b>78%</b>
Unprotected insertive anal sex	54	59%
Used withdrawal before ejaculation to prevent HIV transmission	16	18%
<b>Exchanged sex for money or drugs</b>	<b>11</b>	<b>9%</b>
<b>Met sex partner on the Internet</b>	<b>46</b>	<b>39%</b>
<b>Was tested for an STD</b>	<b>57</b>	<b>49%</b>
<b>Use Viagra</b>	<b>28</b>	<b>24%</b>

\* Reported behaviors in the past 12 months among men participating in the HIV Testing Survey.

# Includes subjects who reported sex with a man in the past 12 months.

## Sexually transmitted disease data

Figure 9.6 shows trends in male rectal gonorrhea and male gonococcal proctitis in San Francisco from 1997 through 2002. Data on male rectal gonorrhea originate from case reporting from laboratories and health providers throughout the city. Data on male gonococcal proctitis originate from the municipal STD clinic only. Infection with gonorrhea is a biological marker for high risk sexual behavior as well as a factor that enhances the acquisition and spread of HIV. Among men, rectal gonorrhea is a marker for unprotected receptive anal sex.

The last several years have witnessed a steady increase in reported cases of male rectal gonorrhea, consistent with rises in unprotected anal sex among MSM. Male gonococcal proctitis are cases with symptomatic infection. Data on male gonococcal proctitis suggest that some of the increase in reported male rectal gonorrhea may be due to increased screening.

Data may underestimate true levels of infections due to several factors, including lack of rectal screening by many health providers, under reporting, delayed reporting, and the large proportion of cases that do not manifest symptoms.

Figure 9.6 Male rectal gonorrhea and male gonococcal proctitis among MSM, San Francisco, 1997-2002

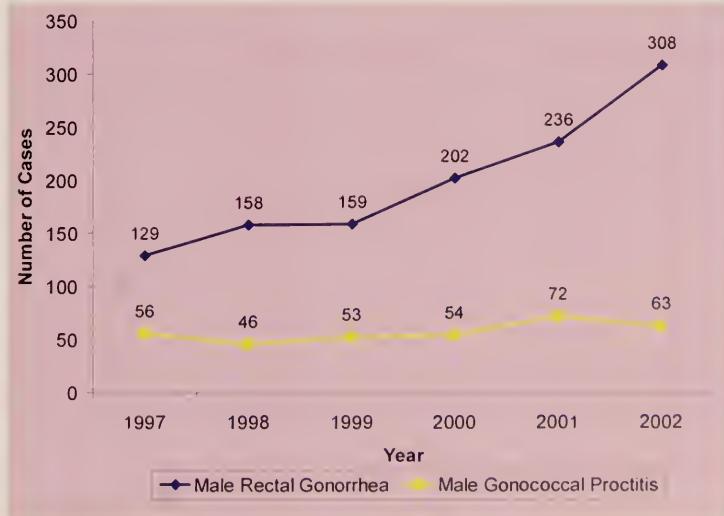
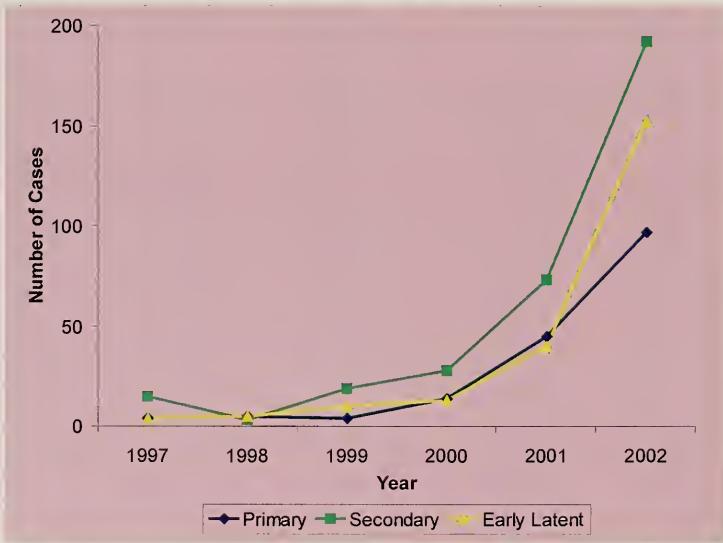


Figure 9.7 shows trends in primary, secondary, and early latent cases of syphilis among MSM in San Francisco from 1997 through 2002. Data originate from case reporting from laboratories and health providers throughout the city although the majority are patients seen at the municipal STD clinic. Like gonorrhea, syphilis is a biological marker for high risk sexual behavior as well as a factor that enhances the acquisition and spread of HIV. The increase in early syphilis among MSM in San Francisco since 1998 is dramatic.

Figure 9.7 Syphilis among MSM, San Francisco, 1997-2002



## 10

# HIV/AIDS among Injection Drug Users

## AIDS surveillance data

Injection drug use by non-MSM comprises the third most frequent exposure group for persons with AIDS in San Francisco, after MSM and MSM IDU. The number of new AIDS cases among non-MSM IDU has declined since 1993 (Figure 10.1). The number of deaths in this group plateaued between 1993 and 1996, declined substantially in 1997 and more modestly thereafter. The number of non-MSM IDU living with AIDS has increased steadily and as of December 31, 2002 there were 890 non-MSM IDU living with AIDS in San Francisco.

By race/ethnicity, African Americans account for the greatest number of non-MSM IDU AIDS cases (Figure 10.2).

Figure 10.1 AIDS cases, deaths, and prevalence among non-MSM IDU, San Francisco, 1993-2002

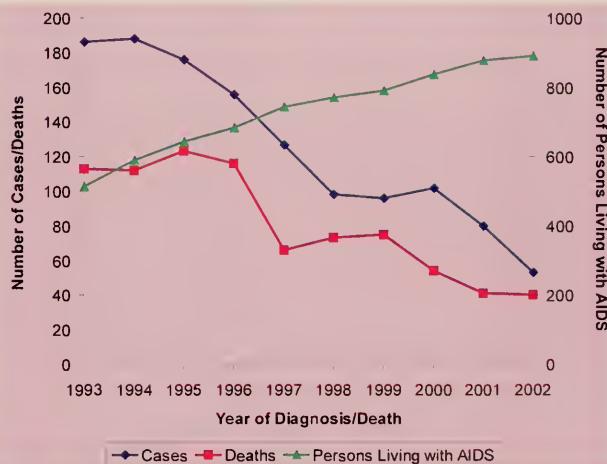


Figure 10.2 AIDS cases among non-MSM IDU by race/ethnicity, San Francisco, 1993-2002

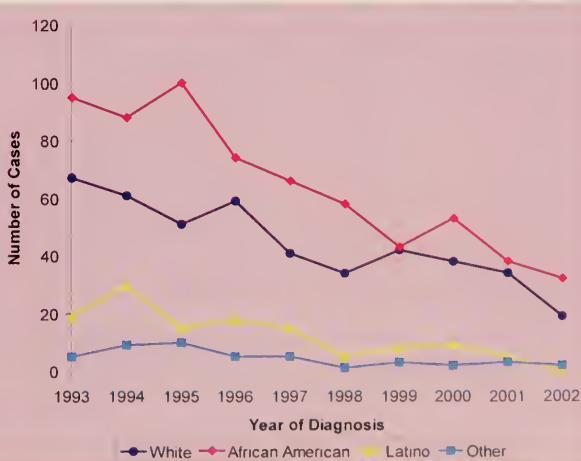


Table 10.1 shows the risk and race/ethnicity distribution of AIDS cases directly or indirectly associated with injection drug use. MSM IDU account for the majority (63%) of IDU-associated AIDS cases followed by male heterosexual IDU (23%). Of the MSM IDU cases, 72% are white and 16% African American. This differs markedly from the heterosexual male and female IDU AIDS cases in which 49% and 53% respectively, are African American.

**Table 10.1** Injection drug use-associated AIDS cases by exposure category and race/ethnicity, diagnosed through December 2002, San Francisco

Exposure Category	Race/Ethnicity Distribution by Percent				
	Total Number	White	African American	Latino	Other
Male heterosexual IDU	1,379	36%	49%	13%	2%
Female heterosexual IDU	608	33%	53%	9%	5%
MSM IDU	3,756	72%	16%	10%	3%
Lesbian IDU	45	49%	31%	13%	7%
Heterosexual contact with IDU	165	35%	44%	14%	7%
Children whose mothers are IDUs or sex partners of IDUs	30	17%	53%	17%	13%

### HIV risk behavior data

Injection and sexual behaviors among IDU are derived from the HIV Testing Survey (see Technical Notes). Participants were recruited from street locations in San Francisco during 2001. Sixty-nine percent had ever been in drug treatment program (Table 10.2). There were 13 (12%) IDU who reported not using a new sterile needle the last time shooting up; five shared needles with someone else and three cleaned the needle before using.

**Table 10.2** Injection behaviors among IDU, the HIV Testing Survey, San Francisco

	Number	%
<b>Total number participants</b>	<b>105</b>	
Had ever been in drug treatment program	72	69%
Reported not using a new sterile needle last time shooting up	13	12%
Shared needle	5	38%
Cleaned needle when sharing	3	23%

Ninety-four percent of female IDU reported vaginal sex in the past 12 months; among these, 81% reported vaginal sex without a condom (Table 10.3). Eighteen percent of women reported anal sex and none of these used condoms for anal sex.

Nearly all of the male IDU who were sexually active with women reported having vaginal sex in the past 12 months and 80% did not use a condom. Among the men, 26% had anal sex with women in the past 12 months and 92% did not use condoms for anal sex.

There were 16 male IDU who had male sex partners. Of these, 50% reported receptive anal sex and 75% of those reporting anal sex did not use condoms. Insertive anal sex with a male partner was reported by 56% of these subjects and 67% did not use condoms.

Table 10.3 Sexual behaviors\* among IDU, the HIV Testing Survey, San Francisco

	Number	%
<b>Female IDU<sup>#</sup></b>	<b>34</b>	
<b>Vaginal sex with a man</b>	<b>32</b>	<b>94%</b>
Unprotected vaginal sex	26	81%
<b>Anal sex with a man</b>	<b>6</b>	<b>18%</b>
Unprotected anal sex	6	100%
 <b>Male IDU with Female Sex Partners<sup>†</sup></b>	 <b>47</b>	
<b>Vaginal sex</b>	<b>46</b>	<b>98%</b>
Unprotected vaginal sex	37	80%
<b>Anal sex</b>	<b>12</b>	<b>26%</b>
Unprotected anal sex	11	92%
 <b>Male IDU with Male Sex Partners<sup>‡</sup></b>	 <b>16</b>	
<b>Receptive anal sex</b>	<b>8</b>	<b>50%</b>
Unprotected receptive anal sex	6	75%
<b>Insertive anal sex</b>	<b>9</b>	<b>56%</b>
Unprotected insertive anal sex	6	67%

\* Reported behaviors in the past 12 months among IDU women and men participating in the HIV Testing Survey.

# Includes IDU women who reported sex with a man in the past 12 months.

† Includes subjects who reported sex with a woman in the past 12 months.

‡ Includes subjects who reported sex with a man in the past 12 months.

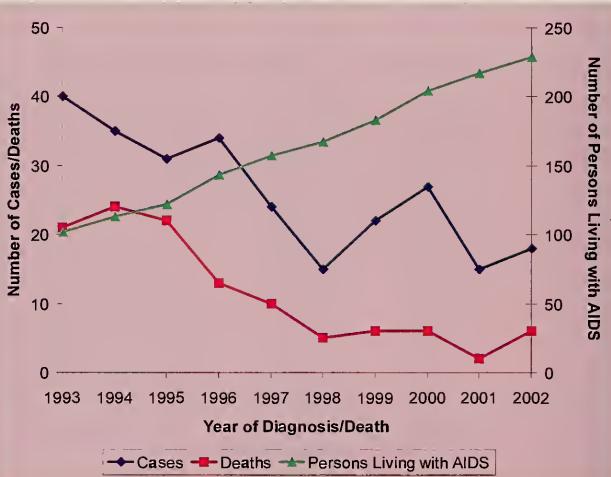
## 11

# HIV/AIDS among Heterosexuals

## AIDS surveillance data

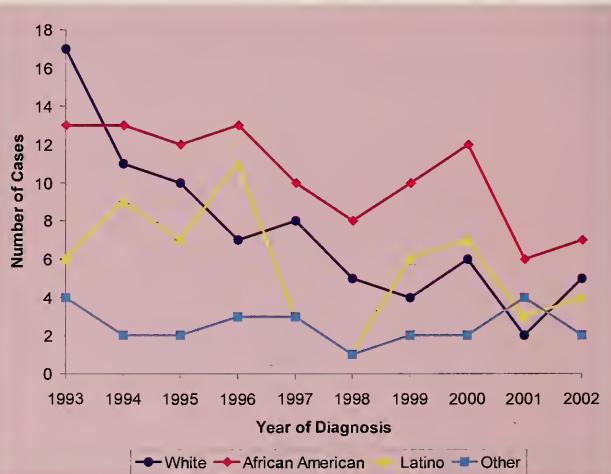
The number of AIDS cases among persons who acquired HIV infection through heterosexual contact is small relative to other risk groups. The number of new AIDS cases in this group peaked in 1993 with 40 cases diagnosed that year (Figure 11.1). The number of deaths among heterosexual non-IDU peaked in 1994 with 24 deaths occurring that year. The number of heterosexual non-IDU living with AIDS has increased steadily to a total of 229 by December 31, 2002.

Figure 11.1 AIDS cases, deaths, and prevalence among heterosexuals, San Francisco, 1993-2002



Trends in heterosexual AIDS cases by race/ethnicity fluctuate year to year due to small numbers (Figure 11.2). In general, African Americans account for the largest number of heterosexual AIDS cases since 1994.

Figure 11.2 AIDS cases among heterosexuals by race/ethnicity, San Francisco, 1993-2002



The majority of heterosexually acquired AIDS cases are women (Table 11.1). Of the 308 women in this group, 130 (42%) reported sex with an IDU. Among the 98 men in this risk group, 35 (36%) reported an IDU partner. Fifty-nine percent of men and 37% of women reported sex with an HIV infected partner of unknown risk.

**Table 11.1** Heterosexually transmitted AIDS cases by exposure category and gender, diagnosed through December 2002, San Francisco

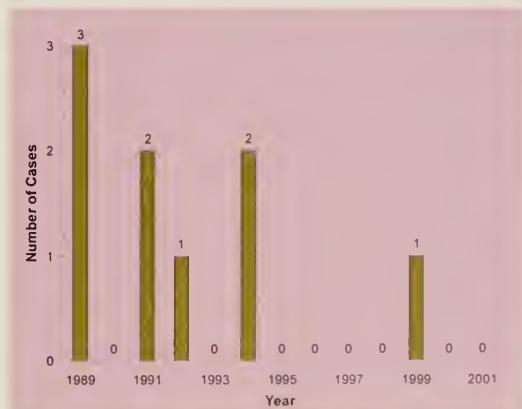
Exposure Category	Men		Women	
	Number	%	Number	%
Sex with injection drug user	35	36%	130	42%
Sex with bisexual men	N/A	N/A	55	18%
Sex with HIV+ transfusion recipient/ persons with hemophilia	5	5%	8	3%
Sex with HIV+ person of unknown risk	58	59%	115	37%
<b>Total</b>	<b>98</b>	<b>100%</b>	<b>308</b>	<b>100%</b>

## HIV prevalence and incidence data

### *Military Data*

Figure 11.3 shows the number of new military recruits from San Francisco who were detected to be HIV-positive. Among San Franciscans wishing to enter military service since 1989, HIV infection is rare. Only one recruit was HIV-positive from 1995 through 2001. Interpretation of these data must take into account the deliberate exclusion of gay men, lesbians, and persons with injection drug use histories from entering military service.

**Figure 11.3** HIV cases among military recruits, San Francisco, 1989-2001



### Blood Donor Data

Figure 11.4 shows the rate of detection of HIV-positive units of blood per 100,000 donations made by residents of the San Francisco Bay Area. The prevalence of HIV-positive donations dramatically dropped after the advent of HIV antibody testing in 1985 and has sustained a very low rate to the present. Data reflect the selection of blood donors at low risk for HIV infection, not necessarily HIV prevalence in the general population. These data, together with the current low rate of new AIDS cases resulting from transfusion of blood and blood products, point to successes in keeping the blood supply free of contamination with HIV since 1985. The use of nucleic acid testing has further reduced the chance that a donation made during the “window period” of HIV-antibody testing would escape detection. Nonetheless, there remains an extremely low theoretical chance of HIV transmission through blood transfusion due to the limits of test sensitivity and human error.

Figure 11.4 HIV prevalence rate among blood donations, San Francisco Bay Area, 1985-2002



## HIV risk behavior data

Sexual and drug use behaviors among heterosexual men and women are derived from the HIV Testing Survey (see Technical Notes). Participants were recruited from patients seeking care at the San Francisco sexually transmitted disease clinic during 2001. Ninety-eight percent of women reported vaginal sex in the past 12 months; among these, 79% reported vaginal sex without a condom (Table 11.2). Only sixteen percent of women reported anal sex and none of these used condoms for anal sex.

Ninety-eight percent of the men reported having vaginal sex in the past 12 months and 88% of these did not use a condom. Among the men, 33% had anal sex with women in the past 12 months and 69% of these did not use condoms for anal sex.

Illicit drug use in the past 12 months was frequently reported. Half of respondents reported marijuana use in the last 12 months (Figure 11.5). Club/designer drugs (e.g. Ecstasy, GHB), speed, and hallucinogens were also common.

Table 11.2 Sexual behaviors\* among heterosexuals, the HIV Testing Survey, San Francisco

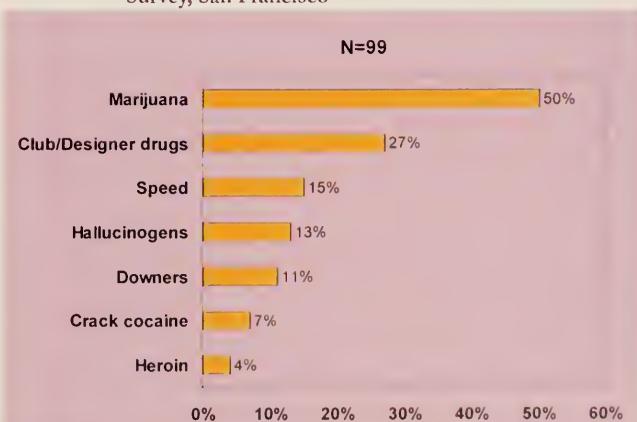
	Number	%
<b>Heterosexual Women with Men<sup>#</sup></b>	<b>49</b>	
<b>Vaginal sex</b>	<b>48</b>	<b>98%</b>
Unprotected vaginal sex	38	79%
<b>Anal sex</b>	<b>8</b>	<b>16%</b>
Unprotected anal sex	8	100%
<b>Heterosexual Men with Women<sup>†</sup></b>	<b>49</b>	
<b>Vaginal sex</b>	<b>48</b>	<b>98%</b>
Unprotected vaginal sex	42	88%
<b>Anal sex</b>	<b>16</b>	<b>33%</b>
Unprotected anal sex	11	69%

\* Reported behaviors in the past 12 months among heterosexuals participating in the HIV Testing Survey.

# Includes subjects who reported sex with a man in the past 12 months.

† Includes subjects who reported sex with a woman in the past 12 months.

Figure 11.5 Illicit drug use\* among heterosexuals, the HIV Testing Survey, San Francisco



\* Reported behaviors in the past 12 months among men and women participating in the HIV Testing Survey.

### Sexually transmitted disease data

Figure 11.6 shows the annual number of primary, secondary, and early latent cases of syphilis among heterosexual men in San Francisco from 1997 through 2002. Data originate from case reporting from laboratories and health providers throughout the city, although the majority are patients seen at the municipal STD clinic. Unlike MSM, syphilis among heterosexual men remains relatively low with no upward trend.

Figure 11.6 Syphilis among heterosexual men, San Francisco, 1997-2002

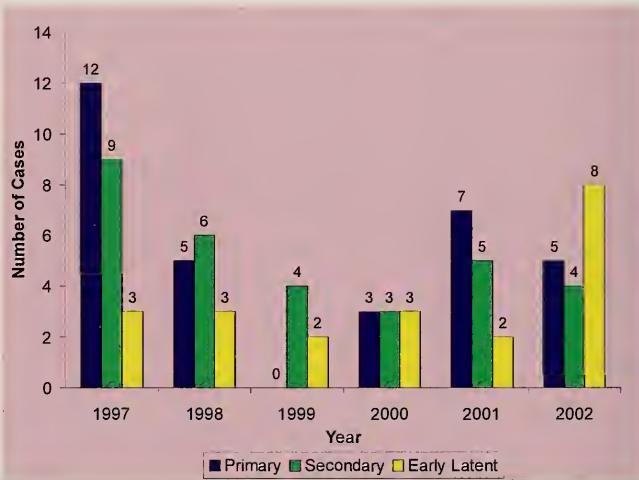
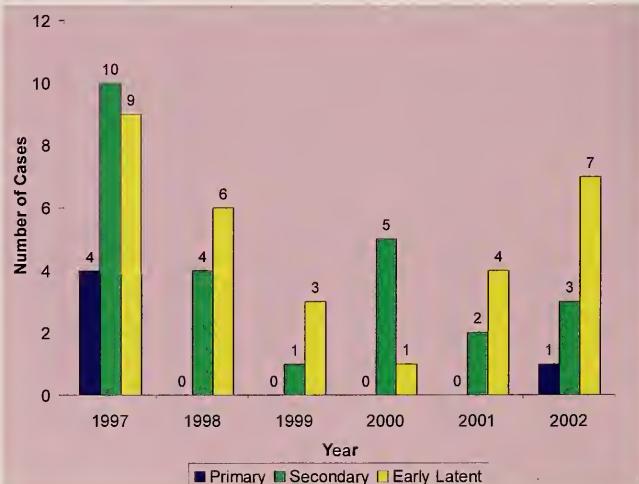


Figure 11.7 shows the annual number of primary, secondary, and early latent cases of syphilis among women in San Francisco from 1997 through 2002. Data originate from case reporting from laboratories and health providers throughout the city, although the majority are patients seen at the municipal STD clinic. Among women, syphilis cases are low with no temporal trend.

Figure 11.7 Syphilis among women, San Francisco, 1997- 2002



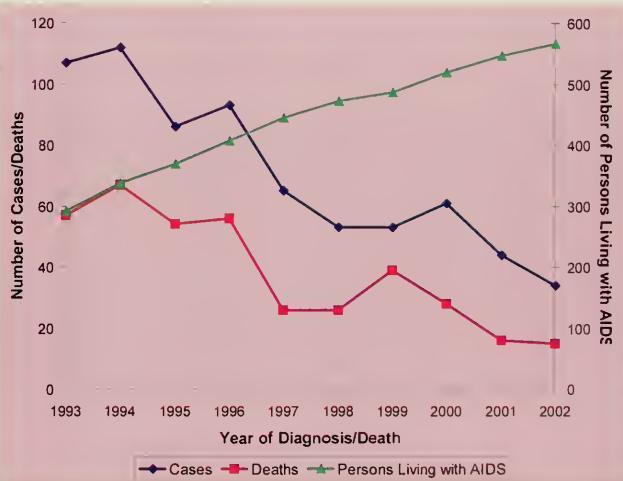
## 12

## HIV/AIDS among Women

## AIDS surveillance data

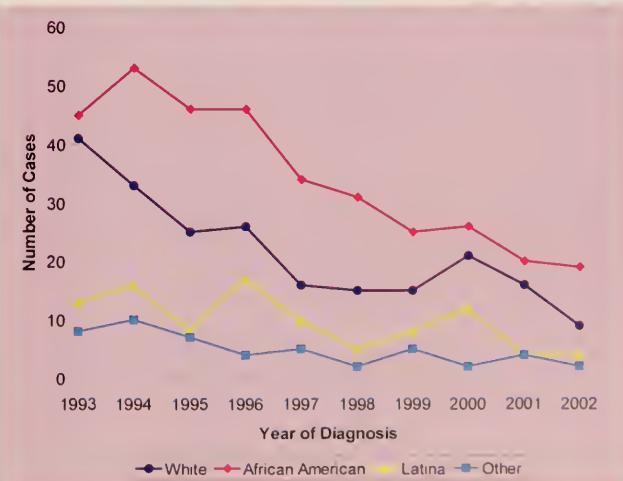
The number of AIDS cases and deaths among women in San Francisco peaked in 1994 with 112 cases and 67 deaths occurring that year (Figure 12.1). As of December 31, 2002 there were 566 women living with AIDS.

Figure 12.1 AIDS cases, deaths, and prevalence among women, San Francisco, 1993-2002



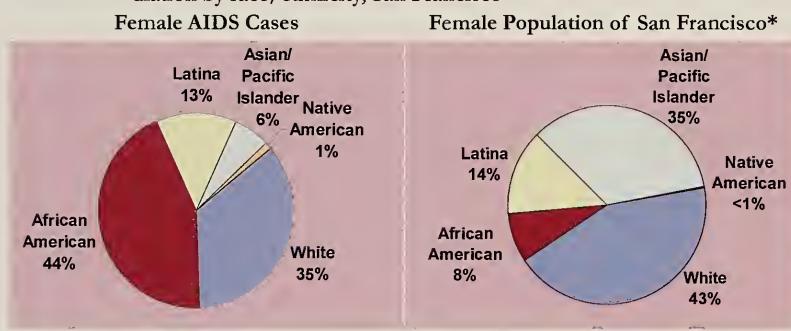
The number of new AIDS cases among African American women has been higher than women of other race/ethnic groups between 1993 and 2002 (Figure 12.2).

Figure 12.2 Female AIDS cases by race/ethnicity, San Francisco, 1993-2002



African American women comprise a disproportionate percentage of the women with AIDS in San Francisco. Among female AIDS cases, 44% occurred among African Americans, even though African American women comprise only 8% of the San Francisco female population (Figure 12.3).

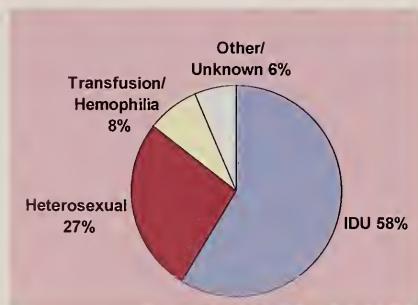
**Figure 12.3** Female AIDS cases diagnosed through December 2002 and female population by race/ethnicity, San Francisco



\* United States 2000 Census data.

Injection drug use (58%) is the most prominent risk exposure for women with AIDS, followed by heterosexual contact (27%) (Figure 12.4).

**Figure 12.4** Female AIDS cases diagnosed through December 2002 by risk, San Francisco



### Sexual behavior data

Sexual behaviors among women were obtained from a random digit dial telephone survey among San Francisco adults in 2001. Among the 1,025 women interviewed, 686 (67%) acknowledged sex with a male partner in the past 12 months (Table 12.1). Ninety-eight percent of these women had vaginal sex and nine percent had anal sex. There were 41 (4%) women who had sex with a woman in the past 12 months.

**Table 12.1** Sexual behaviors among women, San Francisco, 2001

	Number	%
Sex with Men	686	67%
Vaginal sex	670	98%
Anal sex	59	9%
Sex with Women	41	4%

# HIV/AIDS among Adolescents and Young Adults

## AIDS surveillance data

As of December 31, 2002, 45 adolescents (aged 13-19 years) and 541 young adults (aged 20-24 years) were diagnosed with AIDS in San Francisco (Table 13.1). The characteristics of young adults with AIDS are similar to other adults; the majority are MSM, white, and male. MSM also account for the greatest proportion of AIDS cases among the 13-19 year olds. However, in contrast to young adults in which MSM IDU are the second most frequent risk group, transfusion/hemophilia-related cases account for 24% of adolescent AIDS cases. Eleven percent of adolescent AIDS cases were perinatally acquired. Latinos (49%) and whites (33%) have the greatest representation among adolescent AIDS cases (Figure 13.1).

**Table 13.1** Adolescent and young adult AIDS cases by risk, gender, and race/ethnicity, diagnosed through December 2002, San Francisco

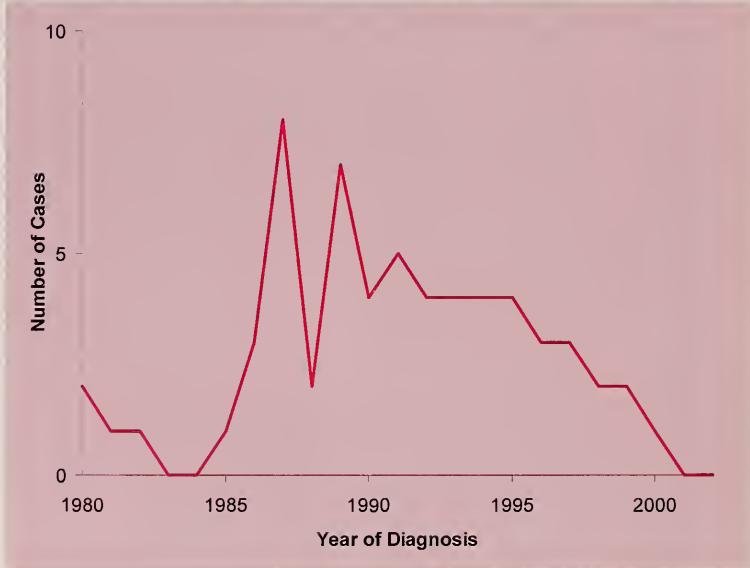
	13-19 Years Old (N=45)	20-24 Years Old (N=541)
<b>Risk</b>		
MSM	29%	59%
IDU	0%	9%
MSM IDU	18%	25%
Transfusion/Hemophilia	24%	2%
Heterosexual	9%	4%
Perinatal	11%	0%
Unidentified	9%	1%
<b>Gender</b>		
Male	84%	93%
Female	16%	7%
<b>Race/Ethnicity</b>		
White	33%	62%
African American	7%	14%
Latino	49%	18%
Asian/Pacific Islander	9%	5%
Native American	2%	1%

# HIV/AIDS among Children

## AIDS surveillance data

As of December 31, 2002, a cumulative total of 61 pediatric AIDS cases (less than 13 years old) were diagnosed in San Francisco. The first pediatric case was diagnosed in San Francisco in 1980 (Figure 14.1). The number of pediatric AIDS cases peaked between 1987 and 1989 and reached a plateau between 1990 and 1995. The number of children with AIDS diagnosed each year continued to decline after 1995. Of note, no pediatric AIDS cases were reported in 2001 or 2002.

Figure 14.1 Pediatric AIDS cases by year of diagnosis, San Francisco, 1980-2002



## Perinatal HIV data

Data on children with HIV in San Francisco are gathered through the Pediatric Spectrum of Disease (PSD) project. The PSD project was established in 1989 by the Centers for Disease Control and Prevention and collects data from eight areas throughout the United States. In Northern California, hospital surveillance for children less than 13 years old infected with HIV or for infants born to infected mothers has occurred at eight pediatric hospitals (including University of California at San Francisco and San Francisco General Hospital). Records from HIV positive pediatric patients cared for through the California Children's Services program, a state agency providing funding and case management for HIV-positive children, are also included in the PSD project. Data presented here include infants born to mothers documented to have HIV before delivery and without a history of blood or blood product transfusion before 1985.

Through December 31, 2002, 306 infants were born to HIV-infected mothers in San Francisco (Table 14.1). Fifty-one (17%) of these infants were confirmed as HIV infected, 228 (74%) seroreverted (that is, were determined to be uninfected after maternal antibodies disappeared), and 27 (9%) were of unknown serostatus. Of the 51 HIV-infected infants, 10 are living with AIDS, 24 are living with HIV non-AIDS, 16 died of AIDS, and one died of HIV non-AIDS. Fifty-two percent of perinatally exposed infants were African American, 19% were Latino, and 20% were white.

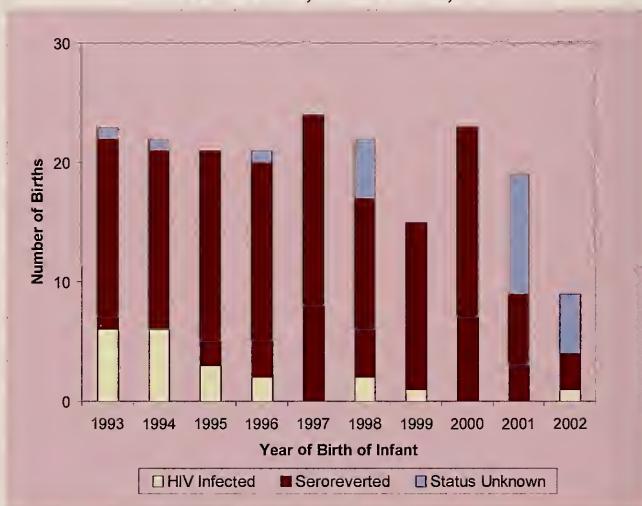
**Table 14.1** Infants born to HIV-infected mothers by infant's HIV status and race/ethnicity, San Francisco, through December 2002

Total	N ( % )
306	
<b>Infant HIV Status</b>	
HIV-infected	51 ( 17 )
AIDS (alive)	10 ( 3 )
AIDS (dead)	16 ( 5 )
HIV only (alive)	24 ( 8 )
HIV only (dead)	1 ( 0 )
Seroreverted (HIV-)	228 ( 74 )
Unknown	27 ( 9 )
<b>Race/Ethnicity</b>	
White	61 ( 20 )
African American	158 ( 52 )
Latino	59 ( 19 )
Asian/Pacific Islander	21 ( 7 )
Other/Unknown	7 ( 2 )

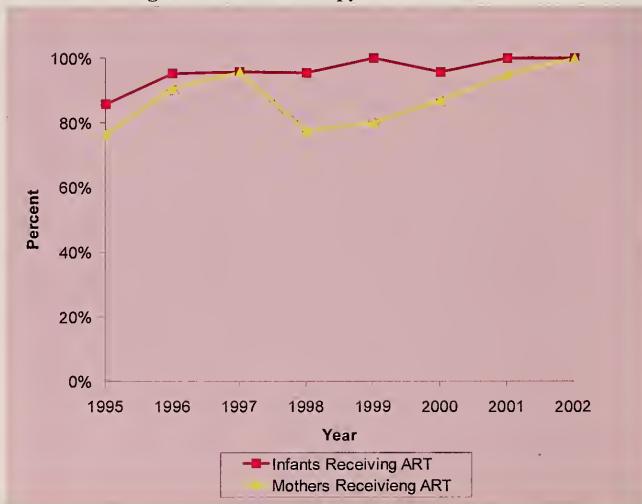
The number of perinatally exposed infants who were confirmed as HIV infected has declined since 1996 (Figure 14.2). Between 1997 and 2002, there were only four HIV infected infants born to infected women in San Francisco and none in 2000 or 2001. This is due to the improved therapies for mothers throughout pregnancy and for infants to prevent perinatal transmission. In 2002, there were nine infants born to HIV-infected mothers; one was HIV-infected, three seroreverted, and five are still under investigation to determine their HIV infection status.

The vast majority of HIV-infected mothers received anti-retroviral therapy during pregnancy (Figure 14.3). In 2002, all HIV-infected mothers and infants received anti-retroviral therapy.

**Figure 14.2** Infants born to HIV-infected mothers by year of birth and infant's HIV status, San Francisco, 1993-2002



**Figure 14.3** Percent of HIV-infected mothers and their infants receiving antiretroviral therapy, San Francisco, 1995-2002



# HIV/AIDS among Transgender Persons

## AIDS surveillance data

Persons with AIDS are categorized as transgender if information regarding gender identity is listed in the medical record. Information on transgender status has been collected since 1996. As of December 31, 2002, a total of 287 transgender AIDS cases were diagnosed (Table 15.1). Sixty-nine percent of transgender cases were non-white compared to 26% of total AIDS cases. Transgender persons with AIDS were more likely to inject drugs than were total AIDS cases (54% and 20%, respectively). Transgender AIDS cases were also younger than total AIDS cases.

**Table 15.1** Characteristics of transgender\* AIDS cases and cumulative AIDS cases diagnosed through December 2002, San Francisco

	Transgender AIDS Cases Diagnosed through December 2002			AIDS Cases Diagnosed through December 2002	
<b>Total</b>	<b>287</b>			<b>28,462</b>	
<b>Race/Ethnicity</b>					
White	88	31%		20,930	74%
African American	97	34%		3,508	12%
Latino	73	25%		3,040	11%
Asian/Pacific Islander	26	9%		843	3%
Native American	3	1%		141	<1%
<b>Injection Drug Use</b>					
Yes	156	54%		5,788	20%
No	131	46%		22,674	80%
<b>Age at Diagnosis</b>					
0 - 19	2	1%		106	<1%
20 - 29	76	26%		3,347	12%
30 - 39	128	45%		12,970	46%
40 - 49	66	23%		8,770	31%
50+	15	5%		3,269	11%

\* See Technical Notes "Transgender Status."

## Sexual risk behavior data

Information on sexual risk behaviors among male to female transgenders comes from the HIV Testing Survey, a venue-based study in which self-identified male to female transgenders recruited from bars, clubs, streets, and agencies were interviewed about HIV testing practices and risk behaviors (see Technical Notes, HIV Testing Survey). Questions regarding sexual behaviors pertain to activities during the 12 months prior to the interview.

There were 96 sexually active subjects; four reported receptive vaginal intercourse (Table 15.2). Receptive anal intercourse was the most frequently reported sexual behavior; 40 (42%) subjects reported having receptive anal intercourse with a primary partner and 45 (47%) reported this behavior with a non-primary partner in the past 12 months. Unprotected receptive anal intercourse was more common with a primary partner than with a non-primary partner (30% and 7%, respectively). Nine (9%) of the transgenders reported insertive anal intercourse with a primary partner and 24 (25%) reported this behavior with a non-primary partner. Unprotected insertive anal sex was reported among 11% of the transgenders who engaged in insertive anal sex with their primary partner and among 4% of the transgenders who reported this behavior with non-primary partners.

Table 15.2 Sexual risk behaviors\* among male to female transgenders (N=96), the HIV Testing Survey, San Francisco

	Primary Partner Number	Primary Partner %	Non-primary Partner Number	Non-primary Partner %
<b>Receptive vaginal sex</b>	4	4%	2	2%
Unprotected vaginal sex	1	25%	0	0%
<b>Receptive anal sex</b>	40	42%	45	47%
Unprotected receptive anal sex	12	30%	3	7%
<b>Insertive anal sex</b>	9	9%	24	25%
Unprotected insertive anal sex	1	11%	1	4%

\* Reported behaviors in the past 12 months.

## 16

# Homeless Persons with AIDS

## AIDS surveillance data

Information on homelessness among persons diagnosed with AIDS has been collected since 1990. A case is classified as homeless if, at the time of AIDS diagnosis, the medical record states that the patient is homeless or the patient's address is a known homeless shelter or a health care clinic or a free postal address not connected to a residence ('general delivery'). Persons for whom information on residence is missing are not classified as homeless. The proportion of homeless AIDS cases increased each year between 1993 and 2000, declined slightly in 2001, and then increased again in 2002 (Figure 16.1). For 2002, 18% of AIDS cases were homeless at the time of diagnosis, up from 13% the previous year.

Compared to the total number of AIDS cases diagnosed between 1993 and 2002, homeless persons with AIDS were more likely to be women, African American, injection drug users, and younger (Table 16.1).

Figure 16.1 Number and percent of homeless AIDS cases by year of diagnosis, San Francisco, 1993-2002

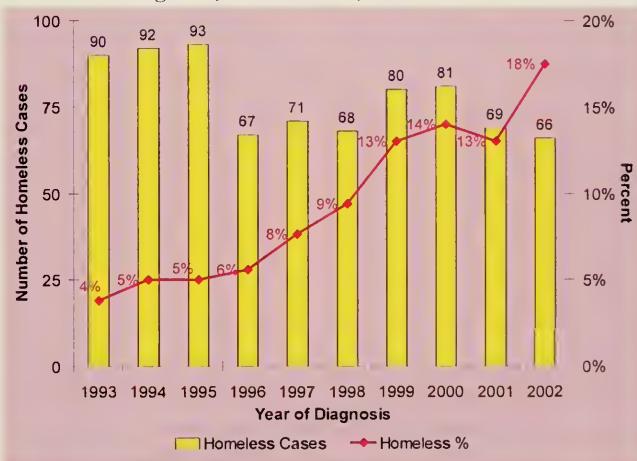


Table 16.1 Characteristics of homeless AIDS cases and AIDS cases diagnosed between 1993 and 2002, San Francisco

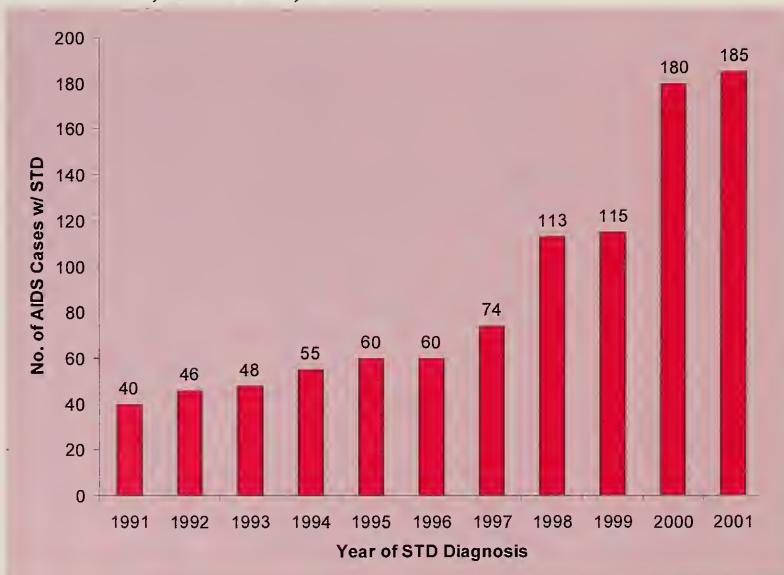
	Homeless AIDS Diagnosed 1993-2002 (N=777)	AIDS Cases Diagnosed 1993-2002 (N=11,094)
<b>Gender</b>		
Male	86%	94%
Female	14%	6%
<b>Race/Ethnicity</b>		
White	43%	66%
African American	40%	17%
Latino	14%	13%
Other	2%	5%
<b>Exposure Category</b>		
MSM	21%	70%
IDU	42%	11%
MSM IDU	32%	14%
Heterosexual	3%	2%
Other	2%	2%
<b>Age at Diagnosis</b>		
0 - 19	<1%	<1%
20 - 29	16%	11%
30 - 39	44%	43%
40 - 49	31%	33%
50+	8%	13%

# Sexually Transmitted Diseases among Persons with AIDS

## AIDS and STD surveillance data

Diagnosis of sexually transmitted diseases (STD) occurring among persons with AIDS was determined through a computerized match of the AIDS and STD case registries through 2001. A match was verified by name, date of birth, and gender. The STD registry included persons reported with gonorrhea, chlamydia, non-gonococcal urethritis, or infectious syphilis. Cases of STDs among persons with AIDS have steadily risen since 1991 (Figure 17.1). All STDs occurred after the AIDS diagnosis indicating unprotected sex among persons known to be HIV-infected.

Figure 17.1 Number of AIDS cases diagnosed with an STD by year of STD diagnosis, San Francisco, 1991-2001



# Hepatitis C Infection among Persons with AIDS

In 2002 we began including diagnoses of hepatitis C infection on all newly reported HIV/AIDS cases as part of AIDS surveillance as a measure of co-morbidities among persons with AIDS. Of the 490 AIDS cases reported through active surveillance in 2002, 90 (18%) had documentation of being co-infected with hepatitis C (Table 18.1). Of the 90 AIDS cases with hepatitis C, 43% were IDU, 32% were MSM IDU, and 24% were MSM without documentation of IDU. Compared to AIDS cases without hepatitis C infection, AIDS cases with hepatitis C were more likely to have a history of injection drug use, to be African American, and female.

**Table 18.1** Characteristics of persons co-infected with hepatitis C among AIDS cases reported in 2002, San Francisco

	AIDS Cases with Hepatitis C		AIDS Cases without Hepatitis C		Percent of AIDS Cases Infected with Hepatitis C %
	Number	%	Number	%	
<b>Total</b>	90	100%	400	100%	18%
<b>Gender</b>					
Male	76	84%	373	93%	17%
Female	14	16%	27	7%	34%
<b>Race/Ethnicity</b>					
White	53	59%	238	59%	18%
African American	26	29%	72	18%	27%
Latino	8	9%	58	15%	12%
Other	3	3%	32	8%	9%
<b>Exposure Category</b>					
MSM	21	24%	298	74%	7%
IDU	39	43%	29	7%	57%
MSM IDU	29	32%	38	10%	43%
Other	1	1%	35	9%	3%
<b>Substance Use Referral</b>					
Yes	60	67%	78	20%	43%
No	18	20%	293	73%	6%
Unknown	12	13%	29	7%	29%
<b>Antiretroviral Use</b>					
Yes	57	63%	270	67%	17%
No	33	37%	123	31%	21%
Unknown	0	0%	7	2%	0%

# HIV Testing Survey

HIV reporting using a non-name code began in San Francisco in July, 2002. Prior to its implementation, concerns were raised regarding the possibility that HIV reporting, particularly if reporting was done using a person's name, would deter or delay at risk persons from seeking HIV testing. To assess the extent to which persons at risk for HIV infection were knowledgeable of HIV reporting regulations and to assess the potential negative effect that HIV reporting might have on test seeking behavior, we conducted the HIV Testing Survey (HITS) (see Technical Notes) between June and October, 2001.

We surveyed MSM attending gay bars, heterosexuals who were seeking medical care at the San Francisco sexually transmitted disease clinic, and IDU who were recruited from street locations. All subjects were at least 18 years old and had lived in California for at least the prior six months.

Although HIV reporting in California was not in effect at the time of this survey, 25% of the MSM, 13% of the heterosexuals, and 36% of the IDU thought California had name-based HIV reporting at that time (Table 19.1). Similarly, 34% of MSM, 26% of heterosexuals and 32% IDU thought that California had HIV reporting using a non-name code at the time the study was conducted. Although we envisioned that participants might have been aware of impending changes to the reporting laws, this was not the case as only 10% of MSM and even fewer of the heterosexuals and IDU were aware of a recent change.

**Table 19.1 Knowledge of HIV reporting regulations in HITS, 2001**

Knowledge of the types of reporting in California	MSM <sup>†</sup> (N=105)	Heterosexual <sup>‡</sup> (N=99)	IDU <sup>#</sup> (N=99)
<b>Thought California had name-based HIV reporting</b>			
Yes	26 ( 25% )	13 ( 13% )	36 ( 36% )
No	35 ( 34% )	25 ( 25% )	14 ( 14% )
Don't know	43 ( 41% )	61 ( 62% )	49 ( 50% )
<b>Thought California had non-name code HIV reporting</b>			
Yes	35 ( 34% )	26 ( 26% )	32 ( 32% )
No	21 ( 20% )	13 ( 13% )	8 ( 8% )
Don't know	48 ( 46% )	60 ( 61% )	59 ( 60% )
<b>Aware of recent change in reporting regulations</b>			
Yes	10 ( 10% )	6 ( 6% )	3 ( 3% )
No	84 ( 80% )	84 ( 85% )	81 ( 82% )
Don't know	11 ( 10% )	9 ( 9% )	15 ( 15% )
<b>Correctly identified California HIV reporting regulations<sup>##</sup></b>			
	6 ( 6% )	9 ( 9% )	0 ( 0% )

† Participants were men recruited from gay bars who reported sex with a man in the past 12 months.

‡ Participants were men and women recruited from the STD clinic who reported sex with a member of the opposite sex in the past 12 months.

# Participants were men and women recruited from street venues who reported injecting drugs in the past 12 months.

## California did not have HIV reporting at the time of the study. Participants must have answered 'no' to all questions regarding the type of HIV reporting that occurred in California.

Among all 303 of the participants, only 23 said that they had either never had a test for HIV or that they had not had a HIV test in the past 12 months and believed that California had name-based HIV reporting (Table 19.2). None of the MSM or heterosexuals and two IDUs cited fear of reporting as a reason for delaying or deferring testing.

**Table 19.2 Risk distribution of the HITS participants who never tested or delayed testing and thought that California had a name-based HIV reporting system**

	MSM <sup>†</sup>	Hetero <sup>‡</sup>	IDU <sup>#</sup>	Total <sup>^</sup>
<b>Thought California had name-based reporting(n)</b>	<b>6</b>	<b>8</b>	<b>9</b>	<b>23</b>
Never tested (n)	0	1	1	2
Not tested within last 12 months (n)	6	7	8	21

<sup>^</sup> Excludes persons who reported having HIV infection.

<sup>†</sup> Participants were men recruited from gay bars who reported sex with a man in the past 12 months.

<sup>‡</sup> Participants were men and women recruited from the STD clinic who reported sex with a member of the opposite sex in the past 12 months.

<sup>#</sup> Participants were men and women recruited from street venues who reported injecting drugs in the past 12 months.



# Technical Notes

## AIDS Incidence Rates

Annual race-specific rates are calculated as the number of cases diagnosed for a particular race/ethnic group during each year divided by the population for that race/ethnicity, multiplied by 100,000. These rates are calculated separately for males and females. Population denominators are based on the population projections for the years 1993-2002, from the Demographic Research Unit, Department of Finance, California ([www.dof.ca.gov](http://www.dof.ca.gov)).

## AIDS Survival

Survival was calculated as the time between the date of initial AIDS diagnosis and the date of death. This includes persons with low CD4 (count<200 or percent<14%) and persons diagnosed with AIDS opportunistic illnesses. The follow-up information of cases was obtained through retrospective and prospective reviews of laboratory records and medical charts. Dates of death were obtained through review of local death certificates, reports from the State Office of AIDS, and matches with the National Death Index (NDI). The most recent NDI match included deaths that occurred through December 31, 2000. Persons not known to have died were censored at the date of their last known follow-up or at December 31, 2000, whichever was more recent.

## Causes of Death

Cause of death information on death certificates is coded using the International Classification of Diseases, 10th revision (ICD-10) for deaths occurring in 1999 or after, and the 9th revision (ICD-9) for deaths occurring prior to 1999. These codes are then processed and evaluated using a computer system to determine the underlying and contributory causes of death ([www.cdc.gov/nchs/about/major/dvs/im.htm](http://www.cdc.gov/nchs/about/major/dvs/im.htm)). We obtained the ICD coded causes of death from the California multiple-cause-of-death computer tape for persons with AIDS who died prior to 1996. For AIDS deaths that occurred in 1996 and after, the cause of death information was obtained through the match with the National Death Index. Deaths attributable to HIV infection or AIDS are coded as 042-044 under ICD-9 and B20-B24 under ICD-10. In addition, the AIDS opportunistic illnesses (see Table 8.1), if listed on death certificates, are included in the category of 'HIV/AIDS' cause of death.

## Grouping of Data Categories

Data regarding certain race/ethnic or risk categories are grouped together when the number of persons with HIV/AIDS in that particular group is small and/or does not present significant trends. For example, "Other" in the Race/Ethnicity breakdown represents Asian/Pacific Islander and Native American; "Other" in the Exposure Category breakdown includes transfusion, hemophilia, heterosexual, perinatal AIDS, or persons of unidentified risk.

## HIV Testing Survey

The HIV Testing Survey was a venue-based study developed by the Centers for Disease Control and Prevention to assess knowledge of HIV reporting regulations and identify barriers to delaying or deterring HIV testing in three high risk populations. MSM were recruited from gay bars, injection drug users were recruited from street corners, and heterosexuals were recruited from the sexually transmitted disease clinic. Participants were aged 18 years or older and residents of California for at least the past six months. In addition, selected behaviors in the past 12 months were required for the analysis: MSM must have had sex with a man, drug users must have injected illicit drugs, and heterosexuals must have had sex with an opposite sex partner and have denied sex with a same sex partner.

In addition to the standard HIV Testing Survey, we conducted a modified version of the survey among male to female transgenders. Eligible subjects were recruited from bars, clubs, streets, and community agencies. Participants were aged 18 years or older, residents of California for at least the past six months, and acknowledged being born male and identifying as female or transgender currently or at sometime in the past.

## Transgender Status

In September 1996, the San Francisco Department of Public Health began noting transgender status when this information is contained in the medical record. Transgender individuals are listed as either male-to-female or female-to-male. Please note that there are several limitations to our transgender data. We believe that our report likely underestimates the number of transgender persons affected by AIDS because data collected for AIDS reporting are derived from the medical record. Consequently, information that may be discussed with the health care provider but not recorded in the medical record is generally not available for the purposes of AIDS case reporting. Because information about transgender status was not collected in a uniform way until September 1996, we have limited data on transgender prior to this, and therefore cannot perform valid time trend analysis for this group.

## Treatments

The type and starting date of HIV antiretroviral therapy is obtained at the time of initial case report and through prospective reviews of medical records. Persons noted to have received a protease inhibitor or a nonnucleoside reverse transcriptase inhibitor were considered to have received highly active antiretroviral therapy (HAART). Use of HIV therapies among persons living with AIDS by year was calculated as the number of persons who were alive at the end of each year and who started the treatment prior to or during that year, divided by the total number of persons living with AIDS at the end of each year. Use of HAART among persons living with AIDS by gender, race/ethnicity, and risk was calculated as the number of persons living with AIDS as of December 31, 2002, for each gender, race, or risk group who were noted to have ever received HAART, divided by the total number of persons living with AIDS as of December 31, 2002, for each gender, race, and risk group. Persons who were diagnosed at a facility outside of San Francisco and persons whose treatment information was not available were excluded.

## D

## Data Tables

Figure 1.1 AIDS cases, deaths, and prevalence, San Francisco, 1980-2002.....3

Year	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Cases	4	31	117	317	624	961	1418	1849	2003	2481	2337	2577
Deaths	0	9	37	136	309	603	907	981	1166	1441	1582	1737
Persons Living with AIDS	4	26	106	287	602	960	1471	2339	3176	4216	4971	5811
Year	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	
Cases	2649	2356	2025	1758	1200	927	724	625	579	523	377	
Deaths	1820	1790	1812	1683	1121	466	455	409	382	236	213	
Persons Living with AIDS	6640	7206	7419	7494	7573	8034	8303	8519	8716	9003	9167	

Figure 2.1 Percent of AIDS cases by race/ethnicity, San Francisco, 1993-2002 .....4

Year	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
White	72%	69%	69%	62%	64%	65%	59%	57%	59%	59%
African American	13%	14%	15%	18%	18%	21%	19%	21%	21%	21%
Latino	10%	12%	12%	14%	13%	10%	17%	16%	13%	14%
Other	4%	4%	4%	5%	4%	4%	6%	6%	7%	6%

**Figure 2.2** Male annual AIDS incidence rates per 100,000 population by race/ethnicity, San Francisco, 1993-2002 .....5

Year	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
White	971	822	725	438	355	275	214	191	180	132
African American	703	603	583	423	341	305	227	225	223	149
Latino	405	400	334	245	171	110	145	121	92	71
Other	84	61	59	44	26	21	23	22	25	15

**Figure 2.3** Female annual AIDS incidence rates per 100,000 population by race/ethnicity, San Francisco, 1993-2002 .....5

Year	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
White	25	21	16	16	10	9	10	13	10	6
African American	113	133	117	115	84	76	61	63	49	46
Latina	24	29	14	29	17	8	13	19	6	6
Other	7	8	6	3	4	1	4	1	3	1

**Figure 2.4** Percent of male AIDS cases by exposure category, San Francisco, 1993-2002 .....6

Year	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
MSM	80%	78%	76%	75%	76%	72%	69%	68%	69%	71%
IDU	6%	6%	8%	9%	10%	10%	11%	13%	11%	10%
MSM IDU	13%	15%	14%	14%	12%	17%	16%	15%	15%	15%
Other	1%	1%	2%	2%	2%	2%	5%	4%	6%	4%

**Figure 2.5** Percent of female AIDS cases by exposure category, San Francisco, 1993-2002 .....6

Year	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
IDU	57%	63%	59%	62%	58%	64%	68%	61%	70%	56%
Heterosexual	32%	27%	26%	30%	29%	25%	28%	34%	14%	35%
Other	11%	10%	15%	8%	12%	11%	4%	5%	16%	9%

Figure 7.2 Trends in insurance status among persons with AIDS by gender, San Francisco, 1997-2002 ..... 18

Male						
Year	1997	1998	1999	2000	2001	2002
Public	14%	13%	14%	16%	17%	18%
Private	50%	40%	40%	40%	42%	37%
None	35%	45%	41%	38%	34%	40%

Female						
Year	1997	1998	1999	2000	2001	2002
Public	51%	49%	64%	51%	64%	32%
Private	18%	25%	13%	20%	9%	12%
None	29%	25%	19%	23%	20%	44%

Transgender						
Year	1997	1998	1999	2000	2001	2002
Public	41%	29%	24%	41%	31%	33%
Private	9%	14%	6%	12%	15%	11%
None	50%	57%	59%	41%	54%	44%

Figure 9.1 AIDS cases, deaths, and prevalence among MSM, San Francisco, 1993 - 2002 ..... 20

Year	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Cases	2091	1768	1513	983	755	593	487	431	404	296
Deaths	1625	1636	1509	974	383	366	324	309	189	163
Persons Living with AIDS	6473	6605	6609	6618	6990	7217	7380	7502	7717	7850

Figure 9.2 AIDS cases among MSM by race/ethnicity, San Francisco, 1993-2002 ....20

Year	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
White	1591	1323	1135	668	540	422	315	283	270	194
African American	202	181	140	126	87	77	61	51	56	37
Latino	209	200	179	136	100	67	82	70	52	46
Other	89	64	59	53	28	27	29	27	26	19

**Figure 9.3 Percent of MSM reporting unprotected anal intercourse by self-reported HIV status in the last six months, the Stop AIDS Project, San Francisco, 1998-2002 .....** 21

Year	1998	1999	2000	2001	2002
HIV Positive	40%	42%	46%	51%	45%
HIV Negative	30%	32%	36%	37%	32%
HIV Status Unknown	23%	25%	26%	26%	22%

**Figure 9.4 Percent of MSM reporting unprotected anal intercourse with multiple partners by self-reported HIV status in the last six months, the Stop AIDS Project, San Francisco, 1998-2002.....** 21

Year	1998	1999	2000	2001	2002
HIV Positive	29%	30%	37%	37%	34%
HIV Negative	14%	16%	19%	22%	18%
HIV Status Unknown	13%	13%	16%	12%	12%

**Figure 9.5 Percent of MSM reporting unprotected anal intercourse with at least 2 partners of unknown HIV status in the last six months, the Stop AIDS Project, San Francisco, 1999-2002 .....** 22

Year	1999	2000	2001	2002
HIV Positive	19%	20%	25%	23%
HIV Negative	10%	12%	15%	13%
HIV Status Unknown	12%	11%	16%	13%

**Figure 9.7 Syphilis among MSM, San Francisco, 1997-2002 .....** 24

Year	1997	1998	1999	2000	2001	2002
Primary	4	5	4	14	45	97
Secondary	15	3	19	28	73	192
Early Latent	4	5	10	13	40	152

**Figure 10.1 AIDS cases, deaths, and prevalence among non-MSM IDU, San Francisco, 1993-2002 .....25**

Year	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Cases	186	188	176	156	127	98	96	102	80	53
Deaths	113	112	123	116	66	73	75	54	41	40
Persons Living with AIDS	514	590	643	683	744	769	790	838	877	890

**Figure 10.2 AIDS cases among non-MSM IDU by race/ethnicity, San Francisco, 1993-2002 .....25**

Year	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
White	67	61	51	59	41	34	42	38	34	19
African American	95	88	100	74	66	58	43	53	38	32
Latino	19	30	15	18	15	5	8	9	5	0
Other	5	9	10	5	5	1	3	2	3	2

**Figure 11.1 AIDS cases, deaths, and prevalence among heterosexuals, San Francisco, 1993-2002 .....28**

Year	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Cases	40	35	31	34	24	15	22	27	15	18
Deaths	21	24	22	13	10	5	6	6	2	6
Persons Living with AIDS	102	113	122	143	157	167	183	204	217	229

**Figure 11.2 AIDS cases among heterosexuals by race/ethnicity, San Francisco, 1993-2002 .....28**

Year	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
White	17	11	10	7	8	5	4	6	2	5
African American	13	13	12	13	10	8	10	12	6	7
Latino	6	9	7	11	3	1	6	7	3	4
Other	4	2	2	3	3	1	2	2	4	2

Figure 11.4 HIV prevalence rate among blood donations, San Francisco Bay Area, 1985-2002 ..... 30

Year	1985	1986	1987	1988	1989	1990	1991	1992	1993
Rate per 100,000 Donations	111	45	33	26	11	13	10	8	4
Year	1994	1995	1996	1997	1998	1999	2000	2001	2002
Rate per 100,000 Donations	7	5	3	6	5	2	2	1	4

Figure 12.1 AIDS cases, deaths, and prevalence among women, San Francisco, 1993-2002 ..... 33

Year	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Cases	107	112	86	93	65	53	53	61	44	34
Deaths	57	67	54	56	26	26	39	28	16	15
Persons Living with AIDS	292	337	369	406	445	472	486	519	547	566

Figure 12.2 Female AIDS cases by race/ethnicity, San Francisco, 1993-2002 ..... 33

Year	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
White	41	33	25	26	16	15	15	21	16	9
African American	45	53	46	46	34	31	25	26	20	19
Latina	13	16	8	17	10	5	8	12	4	4
Other	8	10	7	4	5	2	5	2	4	2

Figure 14.2 Infants born to HIV-infected mothers by year of birth and infant's HIV status, San Francisco, 1993-2002 ..... 38

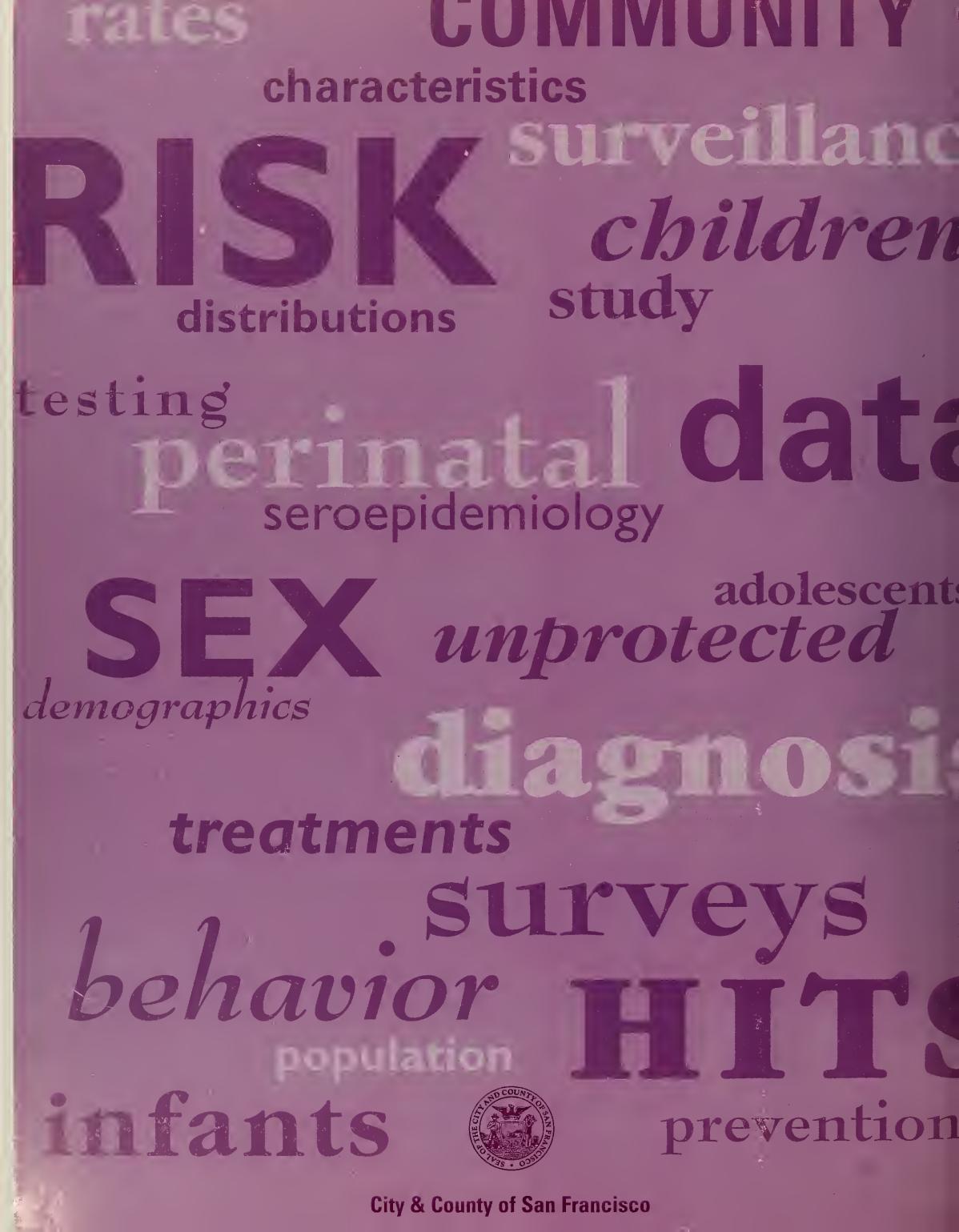
Year	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
HIV Infected	6	6	3	2	0	2	1	0	0	1
Seroreverted	16	15	18	18	24	15	14	23	9	3
Status Unknown	1	1	0	1	0	5	0	0	10	5

Figure 14.3 Percent of HIV-infected mothers and their infants receiving antiretroviral therapy, San Francisco, 1995-2002 ..... 38

Year	1995	1996	1997	1998	1999	2000	2001	2002
Infants Receiving ART	86%	95%	96%	95%	100%	96%	100%	100%
Mothers Receiving ART	76%	90%	96%	77%	80%	87%	95%	100%

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